Sustainable Biomass Program

Supply Base Report: Template for Biomass Producers

Futerra

www.sbp-cert.org

Completed in accordance with the Supply Base Report Template Version 1.3

For further information on the SBP Framework and to view the full set of documentation see www.sbp-cert.org

Document history

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Version 1.2 published 23 June 2016

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Contents

1 Overview

On the first page include the following information:

Producer name:	FUTERRA, TORREFAÇÃO E TECNOLOGIA - TRANSFORMAÇÃO DE BIOMASSA PARA ENERGIA, S.A.
Producer location:	Zona Industrial de Campo 4440 Campo Valongo, Portugal
Geographic position:	41.162651 (41°09'45.5"N) latitude -8.454410 (8°27'15.9"W) longitude
Primary contact:	Ana Castro
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Company website:	https://futerrafuels.com
Date report finalised:	24 July 2019
Close of last CB audit:	26 July 2019
Name of CB:	Control Union Certifications
Translations from English:	Yes to Portuguese
SBP Standard(s) used:	Standard 1, v. 1.0; Standard 2, v. 1.0; Standard 4, v. 1.0; Standard 5, v. 1.0.
Weblink to Standard(s) used:	http://www.sustainablebiomasspartnership.org/documents

SBP Endorsed Regional Risk Assessment: N/A

Weblink to SBE on Company website: https://futerrafuels.com/en/certifications

Indicate how the current evaluation fits within the cycle of Supply Base Evaluations				
Main (Initial) Evaluation	**First Surveillance**	**Second Surveillance**	**Third Surveillance**	**Fourth Surveillance**
☒	☐	☐	☐	☐

2 Description of the Supply Base

2.1 General description

Futerra a pellet production company located in the village of Valongo in Portugal. Valongo is located near to the city of Porto. Futerra buys low-quality primary feedstock from over a hundred suppliers and secondary feedstock from around 10 sawmills. Around 30 feedstock suppliers are FSC certified but not all deliver the feedstock with an FSC claim. Futerra produces regular and torrefied wood pellets. Primary feedstock accounts for approximately 90% of total feedstock supply.

Futerra has a production capacity of 120.000 tons of torrefied pellets and 55.000 tons of white pellets a year. It is the world's largest production facility of torrefied pellets. The plant is the first commercial scale torrefaction plant in Portugal. Considering the total amount of feedstock it processes, Futerra is the second largest company in the north of Portugal, after a pulp and paper company. The innovative technology makes it feasible to use low-grade forest residues and debris. This activity contributes to the regional economy and to effective forest fire fighting – the main issue in Portuguese forestry today.

The supply base is Portugal.

Although the Supply Base consists of the whole of Portugal, at present Futerra is only procuring wood from the central and northern administrative regions of Portugal; in specific from:

- Viana do Castelo;
- Braga;
- Villa Real;
- Bragança;
- Porto;
- Aveiro;
- Viseu;
- Coimbra;
- Castelo Branco;
- Leiria;
- Santarem.

Most landowners in these regions own very small plots of only one or two ha.

Futerra does not procure tree species listed by CITES or IUCN; the following tree species are used:

Maritime pine *(Pinus pinaster)*
Scots pine *(Pinus sylvestris)*
Monterey pine *(Pinus radiata)*
Austrian pine (*Pinus nigra)*
Stone pine *(Pinus pinea)*
Eucalyptus *(Eucalyptus spp.);*
Poplar *(Populus spp.).*
Portuguese oak *(Quercus fagines)*
Champion oak (*Quercus rubra)*
Weeping willow (Salix babylonica)
Acacia *(Acacia spp.)*
Planes *(Platanus spp.)*
Chestnuts *(Castanea spp.)*
Ash *(Fraxinus spp.)*
Alder *(Alnus spp.)*

Figure 1. Regions of Portugal

3.2 million ha of forests cover Portugal, corresponding to 35.4% of the country's land mass, followed by soil considered uncultivated (32%) and farmland (24%). Private property by landowners (83%), industrial companies (6%), and communities (Baldios, 8%) correspond to 3.1 million ha of forests. The forest area under communitarian management (Baldios) are subject to old customary and traditional rights and regulated by specific laws. In Portugal, there are, however, no indigenous people or specific minorities relying on the forests for their livelihood.

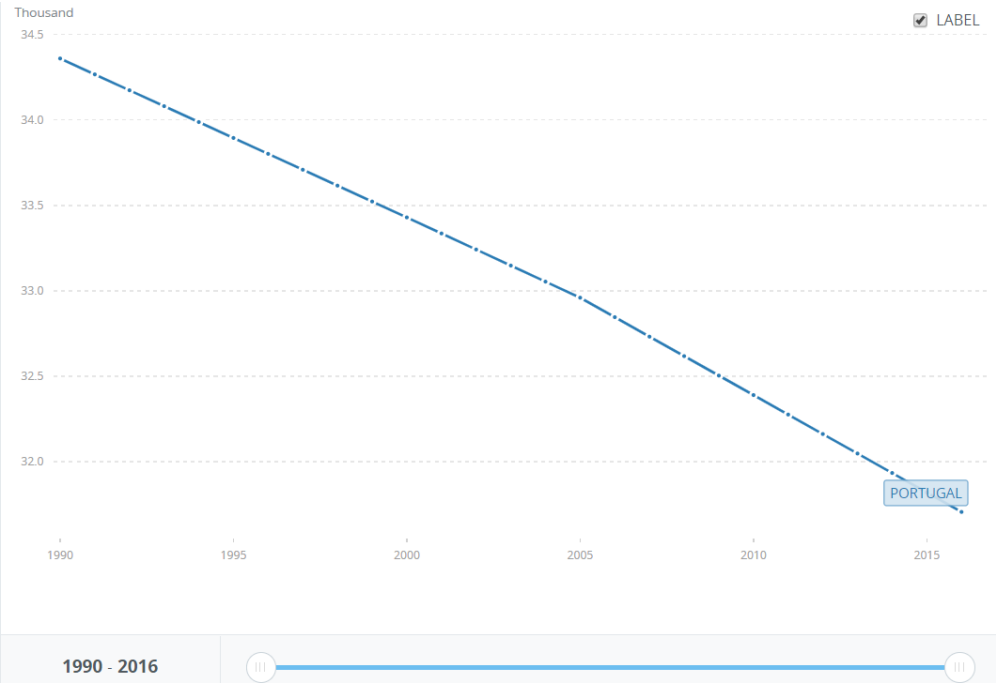
The following aspects related to forestry in Portugal are important to its sustainable management:

- 97% of the forest is in private ownership. More than half of the forests are very small parcels of only one or two ha (mainly in the northern and central regions). Regional forest management plans do not apply to small forests and woodlands;
- 47% of the land has no cadastral data and discrepancies in ownership rights complicate the procurement process. Moreover, many small woodland owners are not very interested in their properties (they can be living far away);

- Forest cover has increased from under 2.0 million to 3.2 million ha over the last 100 years and is dominated by introduced fast-growing species. Over the last decades, there is a tendency to replace semi-natural forests with fast-growing plantations.

Over the period 1995 – 2010 the forest decreased 4,6%. The net decrease of forest areas (150 611 ha) is mainly due to conversion to 'brush and pastures'. In addition, significant areas of forests were converted to urban use (28 000 ha). Data of different sources, for example the FAO, indicate a clear trend in decreasing forest area in Portugal of over 1% every 3 years the last 20 years or more.

Figure 2. Declining forestry area in Portugal from 1990 to 2016 (World Bank 2019, FAO data):



Forest Management Plans (PGF) are mandatory for forest areas above a minimum area defined by Regional Forestry Management Plans (PROFs) as well as in Forest Intervention Areas (ZIF; 940 432 ha). In 2016, there were 1 680 000 ha under PGF from which 450 034 ha overlap the National Classified Areas Network. A felling manifest is required for commercial felling (including all thinning) of all tree species for industrial purposes, with a 30-day deadline after the operation is concluded. The Institute of Conservation of Nature and Forests (ICNF) is the national forest and conservation authority, with competencies on all forest, hunting and nature conservation affairs. ICNF also manages public forest areas and is involved in the management of community areas. Additionally, the Environmental Service of the National Republican Guard (SEPNA/ GNR) inspects environmental issues and natural resources in all private and public areas.

Figure 2: Tree species distribution

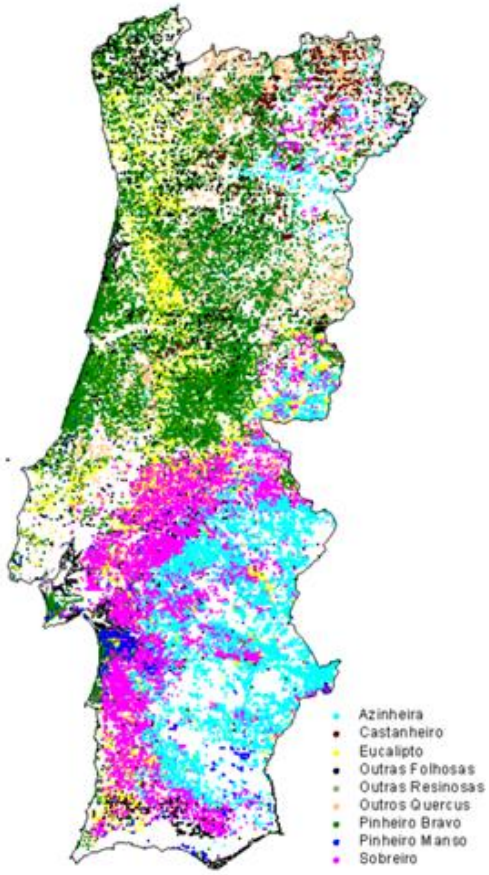
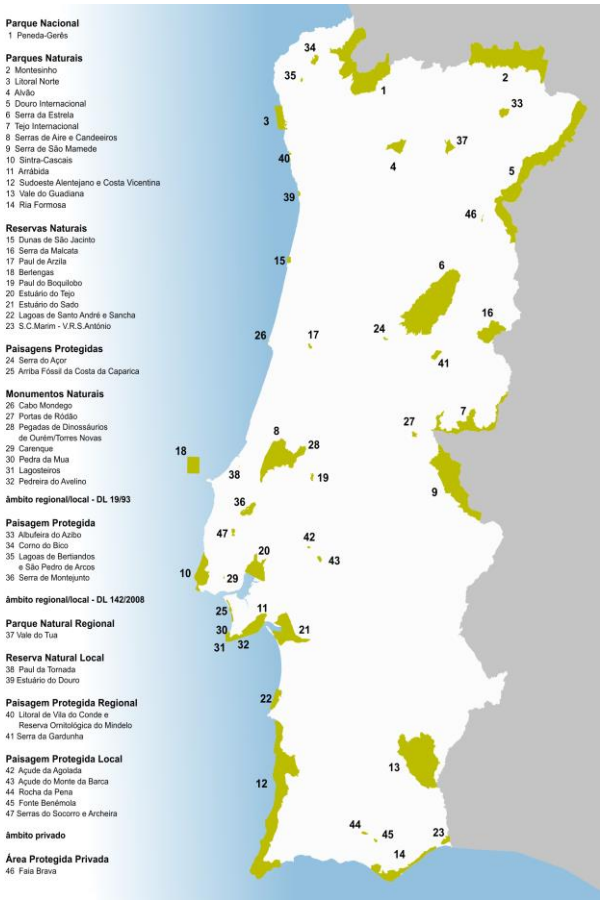


Figure 3: Protected areas



The felling phytosanitary manifest includes identification of the origin of the felling. Also, documentation for transportation mostly identifies the origin of the transport. This are the most common ways to trace the origin of the primary feedstock. However, there are still many areas in Portugal without cadastral data, complicating the matter. Considering the relatively positive Corruption Perception Index (2018) of Portugal (CPI 64) documents, such as invoices and transport documents, can be considered reliable sources of information.

Portuguese forests are 69% deciduous, and 31% coniferous. Regarding tree species, the most relevant are (ICNF, 2013):

- Eucalyptus (*Eucalyptus globulus and other spp.*), 26% of forest area.
  Originally from Tasmania, eucalyptus became one of the most planted trees in Portugal. Since the 1980's there is great controversy about the negative effects of these trees on soil fertility, water scarcity, and biodiversity, which in 1988 and '89 resulted in the implementation of a few laws that restricts the increase of monoculture plantation of this species. In 2017 a law was enforced that forbids the conversion of forests to eucalyptus stands.
- Maritime pine (*Pinus pinaster*), 23% of forest area.
  This species was chosen in the large afforestation campaigns carried out during the nineteenth century, due to its ability to adapt to poor and rocky soil. In addition, it regenerates easily. Its timber is widely used commercially;
- The cork oak (*Quercus suber*), 23% of forest area.

This is an evergreen indigenous species, typical of Mediterranean climate forests. Their presence can be found throughout the country. The cork oak is often seen as the 'national tree' of Portugal. Portugal is the leading producer and exporter of cork.

- Holm oak (*Quercus rotundifolia*), 11% of forest area.
  An evergreen tree of large size. It can be found throughout the Mediterranean climate. It can grow at any type of terrain except of those with poor drainage and or saline nature, but prefers fertile soil, deep and of loamy nature. The wood is well suitable for charcoal and firewood production.
- Stone pine (*Pinus pinea*), 6% of forest area.
  Stone pine is mainly used to produce pine nuts. The residues from thinning and pruning are used for pellet production. Stone pine can mainly be found in the south.

The national legislation of Portugal does list protected tree species, and, for example, it is forbidden to cut any cork oaks (*Quercus suber*), and holm oaks (*Quercus ilix / Quercus rotundifolia*; protective measures by Law Nº.155/2004) and European holly (*Ilex aquifolium*; protected by Law Nº. 423/89).

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) lists a considerable number of protected plants for Portugal. However, the list does not include any trees. The 'Red List' of the IUCN (International Union for Conservation of Nature and Natural Resources) indicates hundreds of plants for the continental territory of Portugal, but also does not include any trees either. Specialists reckon 49 of these plant species to the relevant ones for forestry.

Climate change, the occurrence of extreme meteorological events, in combination with large areas of insufficiently managed forests (especially eucalyptus forests) has increased the phenomenon of devastating forest fires. Portugal accounts for the largest and the most forest fires in Europe. Climate change may also induce pests and diseases due to stress in host plants. In Portugal, phytosanitary problems affect mainly the cork oak and holm oak, showing its decline. The loss of vitality and the mortality of maritime pine is mainly related with the Wood Pine Nematode (WPN), detected in Portugal since 1999.

The forestry industry of Portugal is vertically integrated to derive maximum economic benefit from the three main forest tree species – maritime pine, eucalyptus and cork oak. Maritime pine and eucalyptus dominate the timber-producing regions. Forests of cork oak are generally multifunctional.

Goods produced by way of forestry activities sustain an important industrial chain based on natural resources that in turn supports a strong export sector. Portugal, therefore, considers forests and forestry products as an area of crucial importance to its economy. The forest sector has a significant impact on its GDP. Forest sector products contribute to around 10% of the national export. Forests are also the base of an economic sector which generates around 100 000 jobs (4% of the employable population).

2.2 Actions taken to promote certification amongst feedstock supplier

Futerra interacts with its suppliers and encourages FSC forest certification. Futerra underlines the advantages and importance of forest certification to the wood sector in general and to the pellet business in particular. Most saw mills Futerra cooperates with are certified. Futerra needs larger quantities of FSC certified wood and has a program to stimulate suppliers to achieve FSC forest certification in exchange for long-term contracts.

2.3 Final harvest sampling programme

There are hardly any (no) energy plantations in Portugal. The tree stems are sold to the timber and paper and pulp industries. Futerra uses harvesting and woodworking residues.

The Portuguese law requires feedstock supply to be accompanied with 'Felling Manifests'. These documents state the tree species, traded volumes, land owners and place of harvest. In accordance with the SBP requirements, Futerra is able to classify and describe the tree species and types and categories of primary and secondary feedstock, as also the approximate share of round wood from final fellings.

From the tree species used by Futerra only the maritime pine (*Pinus pinaster*) has a planned forest management period of more than 40 years, but Futerra only uses low grade roundwood (co products). Eucalyptus and Poplar are fast-growing tree species, which are to be cut before the age of 40 years.

Considering the used harvesting systems, nearly 90% are forest residues from clear cuts; over 10% originates from selective cuttings. A part of the pine wood originates from forest maintenance operations. Most clear cuts are small, around 2 ha or less. In the north of Portugal clear cuts are restricted to maximally 10 ha. Reforestation is performed by the land owners.

Futerra examines the forest plots and their age before harvest. The age of the forest is indicated on the 'Manifesto de Corte ou Arranque de Arvores', which is supplied together with the feedstock.

2.4 Flow diagram of feedstock inputs showing feedstock type [optional]

<table>
<tr><td colspan="2">Suppliers of forest residues, burnt wood, etc.</td><td rowspan="2">Futerra pellet plant
175 ton per year production capacity
Regular and torrefied wood pellets</td><td>Exports to the industrial market</td></tr>
<tr><td>Regional forest roundwood suppliers</td><td>Sawmills in the region supplying wood residues</td><td>Sales to medium sized applications in Portugal and abroad</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td></tr>
</table>

2.5 Quantification of the Supply Base

Supply Base

a. Total Supply Base area (ha): 3,2 million ha
b. Tenure by type (ha): Private: 3,1 million ha (97%, including 8% community managed)
Public: 0,1 million ha
c. Forest by type (ha): Temperate Forest: 3,2 million ha
d. Forest by management type (ha): Plantations: 1,8 million ha;
e. Certified forest by scheme (ha): FSC: 434 thousand ha (2019)
PEFC 277 thousand ha (2019)

Feedstock

f. Total volume of Feedstock: 200,000 – 400,000 tonnes (estimation per year)
g. Volume of primary feedstock: 200,000 – 400,000 tonnes (estimation per year)
h. List percentage of primary feedstock (g), by the following categories.
- Certified to an SBP-approved Forest Management Scheme 0-19%
- Not certified to an SBP-approved Forest Management Scheme 80%-100%

i. List all species in primary feedstock, including scientific name
- Maritime pine *(Pinus pinaster)*
- Scots pine *(Pinus sylvestris)*
- Monterey pine *(Pinus radiata)*
- Austrian pine (*Pinus nigra)*
- Stone pine *(Pinus pinea)*
- Eucalyptus *(Eucalyptus spp.);*
- Poplar *(Populus spp.).*
- Portuguese oak *(Quercus fagines)*
- Champion oak (*Quercus rubra)*
- *Weeping willow (Salix babylonica)*
- Acacia *(Acacia spp.)*
- Planes *(Platanus spp.)*
- Chestnuts *(Castanea spp.)*
- Ash *(Fraxinus spp.)*
- Alder *(Alnus spp.)*

j. Volume of primary feedstock from primary forest: None
List percentage of primary feedstock from primary forest (j), by the following categories. Subdivide by SBP-approved Forest Management Schemes: *Not applicable*
- Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme
- Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme

k. Volume of secondary feedstock: specify origin and type: Portugaguese origin, from saw mills, slabs and endings 0-19%
l. Volume of tertiary feedstock: specify origin and composition: None

3 Requirement for a Supply Base Evaluation

SBE completed	SBE not completed
☒	☐

Futerra has chosen to implement the SBP Supply Base Evaluation method (SBP Standard 1), because in the north and centre of Portugal there are very many (a few hundred thousand) small forest owners with only one or two ha forest lands, and FSC, or PEFC group certification has only started to develop. Clients of industrial wood pellets, however, are demanding full deliveries of SBP-compliant biomass already today.

Futerra is interested to obtain international recognition considering the quality and sustainability of forest operations and is motivated to cooperate with forest harvesting companies to implement risk mitigation measures.

4 Supply Base Evaluation

4.1 Scope

The scope of this assessment covers Portugal.

The scope of the SBE includes:

- Primary feedstock that has been evaluated conform FSC Controlled Wood, or
- Primary feedstock that has been supplied with the FSC Controlled Wood claim.

In scope is only the final production 'wood pellets'.

Futerra is FSC certified, it uses the credit system and the FSC Controlled Wood evaluation method.

4.2 Justification

Futerra has in place a monitoring procedure on checking forest operations. During the forest sites and company visits the transparency and compliance with SBP sustainable feedstock indicators are checked and the results are recorded. The sampling and monitoring procedure also covers the forest operations of procured secondary feedstock. Futerra has a team of three specialists working on SBP certification.

The risk assessment has been developed on basis of SBP Standards No1 and No2, version 1.0 of March 2015. Futerra has assessed the risks related to each SBP indicator. The Supply Base Evaluation (SBE) procedure ensures active engagement with a diverse range of stakeholders.

4.3 Results of Risk Assessment

Most indicators are assessed as low risk, mainly because:

a. A stable cultural, juridical, and economical balance in the forestry sector;
b. Low corruption in forestry (the Corruption Perception Index in Portugal is 64).
c. The SBE assesses the management and control systems of the Biomass Producer. Futerra already had procedures in place to mitigate certain risks in the Supply Base.

The risk assessment resulted in 14 'specified risk' identifications, of which 5 indicators were only partly 'specified risk' (and partly low risk). The main reasons for assessing 'specified risk' are listed below in table 4.3. No 'Unspecified risk' indications were found.

Table 4.3: Risk Assessment Results of Futerra

SBP Indicator	Indicators of specified risk Futerra
1.2.1 for areas without cadastral data	The Biomass Producer has implemented appropriate control systems and procedures to ensure that legality of ownership and land use can be demonstrated for the Supply Base
	47% of the land area of Portugal has no Cadastral date. Moreover, the northern and central part of Portugal is characterised by hundred thousands of small private properties. The boundaries of these properties are sometimes disputable. Also the official registration of the property rights can be outdated. For practical reasons, landowners can decide to sell or transfer (inherit) parts of their property without registering the change to the government. Plots can be abandoned and the property rights can be unclear. Wood lands can also be impounded by the government.
2.1.1 HCV 1+3	The Biomass Producer has implemented appropriate control systems and procedures for verifying that forests and other areas with high conservation values are identified and mapped.
	The specified risks are HCV 1 Species diversity, and HCV 3 Ecosystems and habitats. Portugal has a decreasing biodiversity and most wood lands are managed by small landowners, to whom few requirements on sustainable forest management apply; there is no obligatory analysis of critical ecosystem values. The regional forest management plans are not obligatory for the holders of small forests and plantations. Species diversity, ecosystems and habitats are insufficiently protected considering the majority of the forest operations in the north and centre of Portugal. Small land owners and harvesting companies working on small plots do not need to draw attention to the organisations, websites and reports mentioned in the SBE in relation to this indicator. The parcels are normally simply clear cut. A threat to forests like forest fire is identified on maps, but is not addressed adequately by many forest owners. A lot of estates are not or poorly maintained. SEPNA forest guards do not check on this sufficiently.
2.1.2 HCV 1+3	The Biomass Producer has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.
	HCV 1 – Species diversity There is a specified risk that forest operations on private and communitarian grounds and public areas not managed by ICNF could harm species diversity. Special attention Should be given to the National System of Classified Areas (SNAC) and to the Important Bird and Biodiversity Areas (IBAs). HCV 3 – Ecosystems and habitats There is a specified risk that forest operations on private and communitarian grounds and public areas not managed by ICNF could harm ecosystems and habitats.
2.1.3	The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.
	There are no assurances, new eucalyptus plantations from after January 2008 are not already maintained or harvested. Moreover, the forest fires result in instant harvesting of plantations, regardless of their age. Besides, poplar and other tree species can be considered a plantation and the new law only covers Eucalyptus.

	In practise there will be many issues with regard to this indicator on land conversion in the future as well. The government has too little information on the present landcover and too little capacity to implement the new legislation in full. For example, after a forest fire, it will be difficult to determine if illegal conversion to plantations are taking place, regarding the many effected woodland parcels and timeframe for regenerating forest areas. Besides, eucalyptus plantations can result in aggressive natural regeneration after forest fires, and in that case, little can be done to avoid conversion of neighbouring plots. The conversion of forests to urban and agricultural use is significant. In total, the forest area decreased by 150 611 ha (between 1995 and 2010, according to the 6th National Forest Inventory of the ICNF). Over the last decades, Portugal has a negative trend concerning forest area. The ICNF, however, states that the increase of wood lands excels the decline in forests. FAO statistics (2016) show a decrease in forest and agricultural area in Portugal. The new law on restricting conversion to eucalyptus plantations does not safeguard this issue sufficiently.
2.2.1	The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.
	To most small owners no forest management plan applies, the regional forest plans apply only to plots above a certain size.
2.2.2	The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is sourced from forests where management maintains or improves soil quality.
	In approximately half the country there is a risk of degradation of (dry) soils, mainly due to previous land-use practices and choice of introduced tree species. The problem of desertification has existed for centuries and has now become worse due to climate change. The plantations of eucalypt need fertilisation or deplete the soil. Soil quality also depends on the availability of fresh water.
2.2.3	The Biomass Producer has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state.
	In Portugal, key ecosystems and habitats are mostly located in protected areas and in Classified Areas (Natura 2000). However, approximately 2/3 of classified areas are not included in protected areas of the National Network of Protected Areas. Besides, there are key ecosystems and habitats occurring outside Protected and Classified areas. In practise, landowners and harvesting companies have too little knowledge of key-habitats and which habitats need to be conserved.
2.2.4	The Biomass Producer has implemented appropriate control systems and procedures to ensure that biodiversity is protected.
	About 3 600 species of plants can be found in Portugal. There are 69 taxa of terrestrial mammals, a total of 313 bird species, of which around 35% are threatened, and 17 amphibians and 34 reptile species that are present in Portugal. Some of the main threats to the biological diversity of Portugal include: alteration or destruction of habitats; pollution; overexploitation; invasive alien species; urbanization and fires. This, in combination with the fact that there are many small parcels to which few regulations apply and the aggressive nature of Eucalyptus vegetations puts biodiversity under pressure. Several sources report its decline.
2.2.6	The Biomass Producer has implemented appropriate control systems and procedures to verify that negative impacts on ground water, surface water and water downstream from forest management are minimised.
	The thresholds mentioned by law are 50 ha and 10 ha. This are still large areas regarding the populated and hilly countryside of Portugal. A clear-cut area of less than 10 ha can easily

	create runoff and erosion dangers. The landscape can create dangerous situations; residents could be living in the valley. Small land owners are not obliged to take risks to the surroundings into consideration. These risks can also be related to water lines.
2.3.2	Adequate training is provided for all personnel, including employees and contractors.
	Despite legal requirements, Portugal still performs poorly on work efficiency (and safety). The National Strategy for Forests states that the focus on the professionalization and training of the different actors in the forestry sector is of key importance for increasing the competitiveness and, thereby, the development of the sector.
2.4.2 Fire fighting	The Biomass Producer has implemented appropriate control systems and procedures for verifying that natural processes, such as fires, pests and diseases are managed appropriately.
	Considering the lack of an implementation of forest management plans and forest debris cleaning, the risk of forest fires is high. Fires are today the greatest perceived risk in the Portuguese forest sector. Biotic and abiotic risks are supported by disturbances affects. The forests and in particular the eucalyptus plantations have to be manged according to best practises or the risk of forest fire is significant.
2.6.1	Appropriate mechanisms are in place for resolving grievances and disputes, including those relating to tenure and use rights, to forest management practices and to work conditions.
	Considering the situation in Portugal this indicator needs additional attention to perform sufficiently well on social aspects related to sustainable forest management and best practices. There are many land owners with small properties in Portugal. Some regions of the country lack cadastral data, which gives problems on assessing the boundaries of harvesting plots. It is crucial to identify and solve grievances and disputes before the harvesting operations commence (with special attention to the indicators, which are categorised 'specified risk'). Land owners and harvesting companies normally do not actively implement complaint procedures and do not keep records on complaints and comments. This indicator is important to perform sufficiently on several other indicators.
2.8.1	The Biomass Producer has implemented appropriate control systems and procedures for verifying that appropriate safeguards are put in place to protect the health and safety of forest workers (CPET S12).
	Regardless of its legal requirements, Portugal still performs poorly on work safety. International Trade Union Confederation (IUTC) ranks countries against 97 indicators to assess where workers' rights are best protected. Portugal has a rating of 3 (from 1 to 5+). This score is given for countries where: There are 'Regular violations of rights. The government and/or companies are regularly interfering in collective labour rights. There are deficiencies in laws and/or certain practices which make frequent violations possible.'
2.9.1	Feedstock is not sourced from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks.
	There is a specified risk of reducing carbon stocks in certain areas. This risk is more specifically related to the risks mentioned in the following indicators: a. 2.1.3 (land conversion), and b. 2.2.2 (degradation of grounds). Data of different sources, for example the FAO, indicate a clear trend in decreasing forest area in Portugal of over 1% every 3 years the last 20 years or more. For example, the conversion of forests to urban use is significant. In total, the forest area decreased by 150 611 ha between 1995 and 2010, according to the ICNF.

4.4 Results of Supplier Verification Programme

Futerra has studied all the indicators of SBP Standard 1 in relation to the scope of the SBE and categorised all indicators as either low risk or specified risk. Therefore, a Supplier Verification Program was not needed. Verification of suppliers is conducted regularly, and all specified risks are addressed during desk reviews and field assessments of the harvesting plots and supplier's performance.

4.5 Conclusion

Discussion points and opinions on possible sustainability risks in feedstock procurement in Portugal have been studied in detail over the last years by a broad group of stakeholders and institutes. In general, there is a good understanding of the necessity of performing additional mitigating measures.

Forest ownership in Portugal is fragmented; there are many small holders, it is therefore clear that several forest management tasks, starting with an evaluation of ecological, economic and social impacts of operational plans should be considered before and during the forest operations commence.

Within the framework of the FSC Controlled Wood and Due Diligence evaluations, several mitigation measures were already in place.

Regarding legality, 1 SBP indicator was assessed 'specified risk', but only partly . Regarding sustainability, 13 SBP indicators were assessed 'specified risk', of which 4 partly.

Indicator 2.6.1 'Appropriate mechanisms are in place for resolving grievances and disputes, including those relating to tenure and use rights, to forest management practices and to work conditions' is one of the indicators that became 'specified risk'. Such mechanisms play an important function as a safety net for sufficient performance on social and cultural aspects of Sustainable Forest Management and in complying with other indicators of SBP standard 1. In practise, most land-owners and harvesting companies do not have comment and complaint procedures in place, nor investigate the concerns of local residents. If this indicator would not be categorized as a specified risk, several other indicators on the social aspects of sustainability could become insufficiently addressed as well.

There is an overlap in the root causes of most specified risks. They mainly derive from a few fundamental characteristics of forestry in Portugal, such as:

- Dominance of eucalyptus in forestry. It is an introduced tree species that jeopardises sustainability in Portugal. Its use needs to be monitored and contained.
- More than half of the harvesting forest plots are very small, it are privately owned areas of only one or a few ha (mainly in the northern and central regions of Portugal), to which regional forest management plans do not apply;
- Lacking cadastral data (on 47% of the land) and other problems related to the (non-) registration of ownership rights.

These specified risks are, however, well mitigatable. Moreover, corruption in Portugal is relatively low, what is confirmed by the CPI score of 64 points (2018). Forestry in Portugal has a long history and a sound framework of relevant institutes.

5 Supply Base Evaluation Process

The Supply Base Evaluation (SBE) was performed by the Ana Castro, th eCertification Manager (Environmental Engineer) of and Joana Crisostomo, the Sustainable Forest Management Manager (Forestry Engineer) of Futerra, with assistance of Rens Hartkamp, BiomassConsult. Rens Hartkamp (M.Sc. in forestry; Ph.D. in forestry economics) has around 20 years of experience in forest certification and 10 years in biomass certification. He has been active in benchmarking and developing criteria and indicators for biomass certification systems. In total, he assisted around 40 companies on SBP certification, some including SBEs in Portugal. He passed the SBP auditor exams in 2015.

The Supply Base Evaluation Process started with public reports into consideration, as also national legislation, national policies, and publications of relevant institutions and authorities. During the preparation of the SBE, a detailed baseline study was made for each of the SBP indicators. A summarised description on each indicator is presented in Annex 1 and covers all relevant indicators of SBP Standard 1.

The certification team took the following steps in developing the Supply Base Evaluation:

1) Study publicly available reports on the legality and sustainability risks in Portugal;
2) Develop the Risk Assessment and Risk Mitigation Measures in cooperation with Futerra's suppliers ;
3) Develop procedures and check-lists related to the assessment of forestry operations and feedstock procurement;
4) Train the harvesting teams of the most developed feedstock suppliers;
5) Evaluate the effectiveness of the Risk Mitigation Measures in practice (during harvesting operations).

The Forestry Manager is a specialist, who has been involved in wood procurement and field inspections for many years.

Futerra and its feedstock suppliers have experience in forestry in Portugal and most risk mitigation measures were already in place.

The documents stated below are of importance to the management system:

- Signed declarations of selected feedstock suppliers;
- Documentation accompanying feedstock supply (verifying the origin of the wood);
- Procedure on the legality and origin of raw material;
- Best practices regarding harvesting operations;
- Sampling and monitoring procedure;
- Assessment reports and checklists on:
    - Planned forest operations (field inspections);
    - Primary feedstock suppliers (companies);
- Complaint procedures and journals.

The Risk Assessment (RA) did not result in inconclusive indicators (see paragraph 4.3).

6 Stakeholder Consultation

Over 100 stakeholders, including local NGOs, state institutions, government bodies, forest owners associations, academic and research institutions, and leading experts in nature conservation and forestry were contacted to give their input on Futerra's SBR and SBE. These documents were publically available on Futerra's website from 25 June to 24 July 2019.

6.1 Response to stakeholder comments

The stakeholder consultation did not result in any comments.

7 Overview of Initial Assessment of Risk

Table 1. Overview of results from the risk assessment of all Indicators (prior to SVP)

Legality Indicators	Initial Risk Rating		
	Specified	Low	Unspecified
1.1.1		X	
1.1.2		X[2)]	
1.1.3		X	
1.2.1	X[1)]		
1.3.1		X	
1.4.1		X[2)]	
1.5.1		X	
1.6.1		X	

Sustainability Indicators	Initial Risk Rating		
	Specified	Low	Unspecified
2.1.1	X[3)]		
2.1.2	X[3)]		
2.1.3	X[7)]		
2.2.1	X		
2.2.2	X		
2.2.3	X		
2.2.4	X		
2.2.5		X	
2.2.6	X		
2.2.7		X	
2.2.8		X	
2.2.9		X	
2.3.1		X	
2.3.2	X		
2.3.3		X	
2.4.1		X[4)]	
2.4.2	X[5)]		
2.4.3		X	
2.5.1		x	
2.5.2		x	
2.6.1	X[6)]		
2.7.1		x	
2.7.2		x	
2.7.3		x	
2.7.4		x	
2.7.5		x	
2.8.1	X		
2.9.1	X[7)]		
2.9.2		x	
2.10.1		x	

1) Specified risk for areas without cadastral data.
2) These legality indicators are low risk, nevertheless, Futerra has procedures on verifying a few essential aspects.
3) HCV 1 and 3 are specified risk.

   Social and cultural aspects regarding Sustainable Forest Management are considered low risk but are checked during the evaluation of best practises.
4) This sustainability indicator is low risk, nevertheless, Futerra does assess the possible impact of harvest operations on the forests and their surroundings (also considering local residents and entrepreneurs) during field inspections.
5) Specified risk on forest fire-fighting.
6) The mitigation measures of this indicator are important in reducing the risks related to all social aspects of sustainability.
7) Of importance is the negative trend in forest cover (and loss of carbon stocks) over the last 20 years, due to the conversion to agricultural and urban lands.

8 Supplier Verification Programme

8.1 Description of the Supplier Verification Programme

The Risk Assessment had no inconclusive indicators (no ‘unspecified risks’). The results have been discussed with feedstock suppliers and other stakeholders. The indicators, risks, and mitigation measures were clear.

8.2 Site visits

Not applicable.

8.3 Conclusions from the Supplier Verification Programme

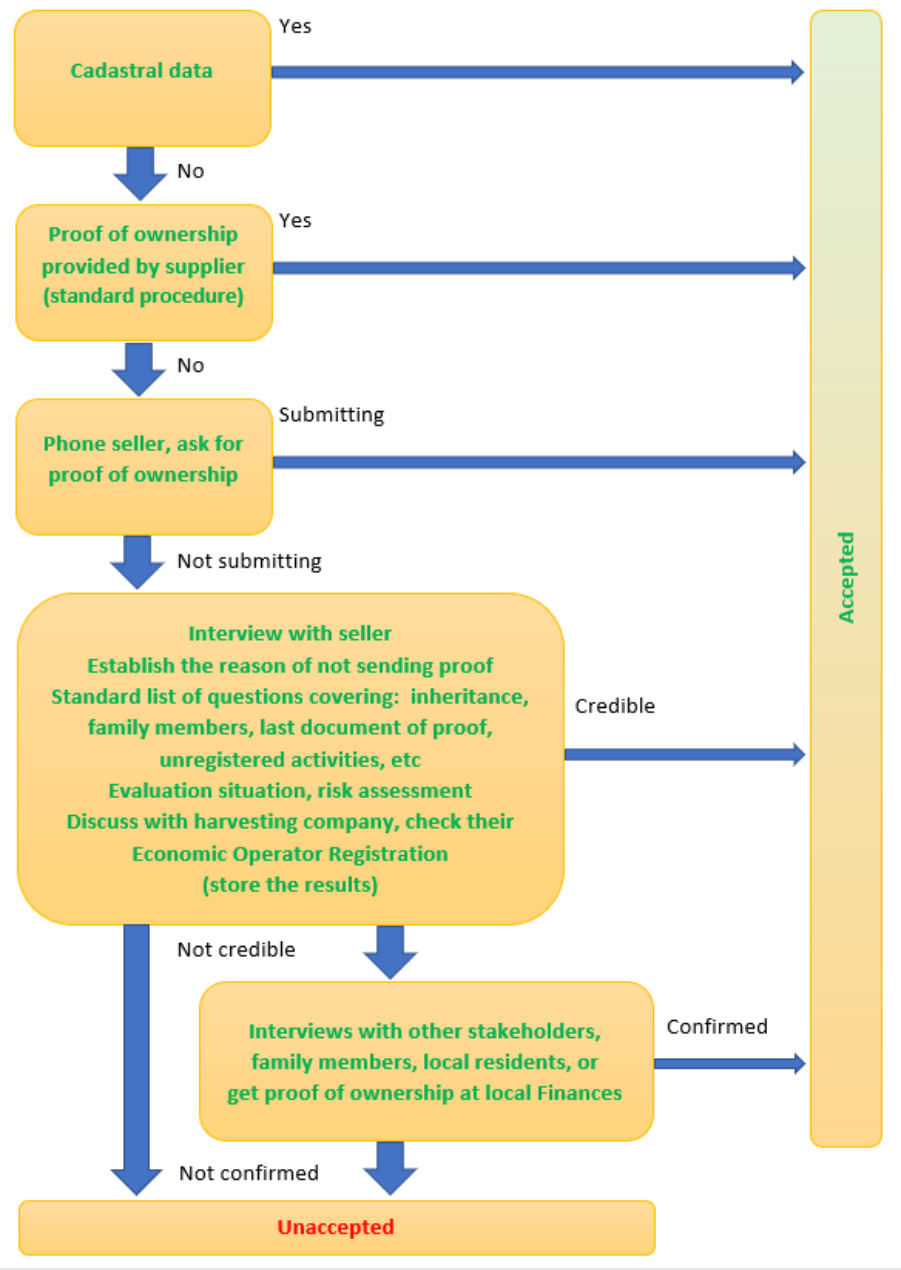
Not applicable.

9 Mitigation Measures

9.1 Mitigation measures

The mitigation measures per indicator are given in the table below. Subsequently, information is given on the management system, implementing the mitigation measures regarding the sustainability indicators.

Table 9.1 Risk Mitgation Measeures Summary

1.2.1	***The Biomass Producer has implemented appropriate control systems and procedures to ensure that legality of ownership and land use can be demonstrated for the Supply Base***
for areas without cadastral data **Mitigation measures**	Procedure for evaluating legality of ownership: 

	Futerra does not buy wood from wood lands, of which the owner rights are unclear. Any unclarity/dispute concerning the ownership of the wood needs to be solved first. Considering forestry in the north of Portugal, the fact that there are little disputes / complaints does not guarantee the wood is legal / the seller is indeed the owner of all the plots harvested. For example, areas can become ownerless and abandoned and some could try to take advantage of the situation before the land is impounded by the government.
2.1.1	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that forests and other areas with high conservation values are identified and mapped.***
HCV 1 & 3 **Mitigation measures**	The control system for feedstock, which also includes regular inspections of suppliers, is duly implemented. All used material is traceable to its origin through the harvest manifests and transport guides. All suppliers have to comply with the laws in force, which are supervised by the Tax Authority and the ICNF (Please see the file 'Plano Regional de Ordenamento Florestal' 'Documentation point 4 'cartografia síntese' (ICNF) for each region). Some HCV areas are designated as protected and classified areas at the national or EU level (Natura 2000). There are also smaller areas or biotopes important to biodiversity, or classified as priority species' habitats. Futerra identifies and maps areas with high conservation values (HCVs) before the harvest comences. HCV 1 and 3 were assessed to have a specified risk. Extra effort is needed to identify and map these values in practice on paper, regarding the forest plot. Internet sources, as well as the local situation needs to be studied. Some HCV areas are designated as protected and classified areas at the national or EU level (Natura 2000). There are also smaller areas or biotopes important to biodiversity or classified as priority species' habitats. Habitats and species vulnerable to forestry operations are identified within the scope of Reed Natura2000 and Habitats and Birds Directive reports. Futerra ensures: • Mapping of the harvesting plot; • Harvesting according to best practices in sustainable forest management; • Cleaning of waste from plantations; • Tree species (no genetically modified trees). Steps taken: • Study publicly available sources (internet sites) and other information regarding the plots were harvesting operations are planned and their surroundings; • Inform feedstock suppliers on found results regarding possible risks in front; • Onsite assessment of the plots and their surroundings prior to harvesting, measures are taken for example, when habitats are found; • Development of adaptions to the harvesting plans, if needed. Below the main sources of information, used to prepare the identification of these values for our harvesting teams. The forestry specialist evaluate every plot before the harvesting operations begins. Futerra inspects the suppliers and harvesting areas.

	HCV 1 – Species diversity There is a specified risk that forest operations on private and communitarian grounds and public areas not managed by ICNF could harm species diversity. Species diversity is evaluated and recorded before harvesting operations commence. Caution and best practises are applied. Special attention is given to the National System of Classified Areas (SNAC) and to the Important Bird and Biodiversity Areas (IBAs). See also below, indicator 2.2.4 *Some information sources:* ➢ Classified areas: http://www.icnf.pt/portal/naturaclas/cart ➢ Protected area plans: http://www.icnf.pt/portal/naturaclas/ordgest/poap ➢ Endangered species: http://www.icnf.pt/portal/naturaclas/patrinatur/especies ➢ Endemic species: http://naturdata.com/index.php?option=com_content&view=article&id=78&Itemid=60 ➢ Digital mapping information from the Manual das Linhas Eléctricas [Manual of Electric Lines] (ICNB 2008) ➢ Important Bird Areas of Portugal at: http://ibas-terrestres.spea.pt/ ➢ Regional Forest Plans (PROF): http://www.icnf.pt/portal/florestas/profs **HCV 3 – Ecosystems and habitats** There is a specified risk that forest operations on private and communitarian grounds and public areas not managed by ICNF could harm ecosystems and habitats. In these situations, Futerra demands to evaluate the environmental impacts (on Ecosystems and habitats) of the forest operations before the forest operations commence. Caution and best practises are applied. See also below, indicator 2.2.3. *Some information sources:* ➢ Habitats Directive (2007-2012) ➢ Rede Natura 2000 database: http://www.icnf.pt/portal/naturaclas/rn2000 ➢ Important Bird Areas of Portugal at: http://ibas-terrestres.spea.pt/ ➢ Convention on Biological Diversity (CBD) via DL no. 21/93, dated 29 June.
2.1.2	***The Biomass Producer has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.***
HCV 1 & 3 **Mitigation measures**	There is a specified risk that forest operations on private and communitarian grounds and public areas not managed by ICNF could harm species diversity, ecosystems and habitats. Species diversity is evaluated and recorded before harvesting operations commence. Special attention is given to the National System of Classified Areas (SNAC) and to the Important Bird and Biodiversity Areas (IBAs). Futerra identifies and addresses potential threats to forests and other areas with high conservation values (HCVs). The control system for feedstock, which also includes regular inspections of suppliers, is duly implemented. Some HCV areas are designated as protected and classified areas at the national or EU level (Natura 2000). There are also smaller areas and biotopes important to biodiversity, which can be classified as priority species' habitats. Steps taken: • Assessment, evaluation and 'SBE approval' of suppliers • Desk Assessment of possible impacts of harvesting operations, regarding Publicly available information from credible third parties; • Training of suppliers on identification of forests with HCVs, and methods to protect HCVs;

	• Identification and mapping of protected species, habitats and key ecosystems on the plot before harvesting; • Development of adaptions to the harvesting plans, if needed; • Harvesting according to best practices in sustainable forest management; See also below, indicator 2.2.4 and indicator 2.2.3.
2.1.3	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.***
Mitigation measures	Futerra considers all pine stands as forests and eucalyptus and poplar stands as plantations. Futerra checks if forests have been changed to eucalyptus or poplar plantations after 2008. When forest is converted to agricultural land or a plantation, or when land use change (conversion) is planned, the feedstock is not categorized as SBP compliant. When a eucalyptus or poplar plantation are cut, the history of the plantation is investigated: • The year of conversion to plantation (if it was converted after 2008). If needed, interviews with stakeholders and residents are taken and the plot is searched for tree stumps. • Was it a forest before being converted to plantation? This is dealt with in the Feedstock Supplier Declaration and addressed in the field operations checklist.
2.2.1	***The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.***
Mitigation measures	In case no forest plan is available (no PROF, PGF ZIF, PUB, SNAC, as well as no PEFC or FSC certification), or a plan is available but does not apply to a small holder, an additional assessment of environmental impacts is made and recorded before harvest. Special attention is given to plots smaller than the minimum threshold for the mandatory Forest Management Plan (PROF) and outside the SNAC. Before harvesting operations commence, the plot is visited and evaluated: • The possible economical, ecological and social impact of the forest operations, including its surroundings. Harvesting plans can be changed to avoid negative impacts; • Was the forest management conform the law in the past (has the forest been cleaned according to the law in the past); • Specific Plans for Forest Intervention (PEIF) are studied for specific measures for the intervention on forest areas with major biotic problems (e.g.: invasive species, plagues or diseases) or abiotic (e.g.: high risk of forest fire); • Potential impacts of operations on ecosystems and biodiversity are identified. Impacts inside and outside the area of operation are considered, for example downstream; • Impacts are monitored and monitoring results are used to improve operational practices. Indicators 2.2.2, 2.2.3, 2.2.4, 2.2.6, and 2.4.2 include relevant management measures which are checked.

2.2.2	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is sourced from forests where management maintains or improves soil quality (CPET S5b).***
Mitigation measures	Before harvesting operations commence the plot is evaluated. Best forestry practises are applied. Best forestry practices apply: • Were needed, considering the soil and groundwater level, only selective cuttings and small clear cuts of maximally 5 ha are planned; • Regeneration focusses on tree species that maintain or improve soil quality; • Leave nutrients in the forests, mainly the green fraction of forest residues less or equal to 3 cm (on the other hand other forest residues need to be cleared to prevent forest fires. • Do not operate near-water areas. • Fertilization of the ground, when needed and possible. On dry locations selective cuttings are often preferable, because the ground gets less direct impact of the sun and the forest can maintain soil quality and regenerate naturally. Poor soil quality can lead to erosion and other problems. Therefore, this indicator is related to indicator 2.2.6.
2.2.3 & 2.2.4	***The Biomass Producer has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state (CPET S8b). &*** ***The Biomass Producer has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).***

Mitigation measures	Futerra prepares (publicly available) data on ecosystems and habitats (see above 2.1.1 on mapping and 2.1.2 on identifying and addressing potential threats). This information is given to all feedstock suppliers. Feedstock suppliers are trained to recognise key ecosystems and habitats.
	
	Steps in risk mitigation:
	• Training of suppliers, assessing and selecting 'SBE approved' suppliers;
	• Desk assessment (before harvesting operations commence) of key ecosystems and habitats:
	  ○ All classified areas:
	  - National Network of Protected Areas;
	  - Special Areas of Conservation (SAC);
	  - Special Protection Areas (SPA);
	  - Ramsar sites;
	  - Important Bird Areas (IBA);
	  ○ Priority habitats in Natura 2000 network;
	  ○ Areas where threatened species occur;
	  ○ Areas where endemic species of the Iberian Peninsula occur;
	  ○ Areas where seasonal concentrations of species occur;
	  ○ Large landscape level forests;
	  ○ Important areas for watershed protection;
	• Forest plot inspection prior harvesting;
	• Mapping of the harvesting plot, indicating key ecosystems, habitats and objects of importance to biodiversity; making photos prior to harvesting.
	• Best forestry practices, including measures to conserve and increase biodiversity (for example, standing dead wood.
	• Change of operational plan, if necessary.

2.2.6	***The Biomass Producer has implemented appropriate control systems and procedures to verify that negative impacts on ground water, surface water and water downstream from forest management are minimised (CPET S5b).***

Mitigation measures	Futerra monitors the harvesting operations of its feedstock suppliers. Best practices are required to comply with the SBE program requirements.
	• Desk assessment (before harvesting operations commence) of Important areas for watershed protection
	  ○ Cork oak and holm oak savannas located in areas with an aquifer recharge rate of over 175 mm/year
	  ○ Aquifers
	• The plots and the surroundings (hill slopes and streams) are inspected on:
	  ○ Runoff problems (regarding the landscape, onsite and in the surroundings);
	  ○ Groundwater level problems (too high or too low);
	  ○ Protection of riversides and (lake) coastlines;
	• In areas vulnerable to water damage, the maximal contiguous clear cut area is 5 ha;
	• Best forestry practices; Feedstock suppliers are trained to not contaminate ground water and to plan forest management operations that protect the soil, forest and surroundings from surface water runoff; Runoff of elements of fertilizers and pesticides into the surrounding environment.

2.3.2	***Adequate training is provided for all personnel, including employees and contractors (CPET S6d).***
Mitigation measures	Futerra trains its personnel on all relevant aspects and demands the same from its feedstock suppliers. • Training records obligatory according to legislation and records of qualification are collected during supplier qualification process and checked during supplier inspections; • Training conducted by Futerra in several fields, including identification of key ecosystems, habitats and species biodiversity (annually and additionally based on the results of the plot assessments); • Training on best forest management practices. • Futerra performs supplier inspections: the training records, (new) workforce, and the hiring of specialists. The level of knowledge of personnel is inspected during site visits.
2.4.2	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that natural processes, such as fires, pests and diseases are managed appropriately (CPET S7b).***
Fire fighting **Mitigation measures**	On the above information specified risk is assessed on the fire management at forest level. Visual inspection of the plot before harvesting (checklists). Checked is if the plot was managed well on fire protection in the past. • Investigation of PMDFCI (Municipal Forest Fire Protection, Municipal de Defesa da Floresta Contra Incêndios); • Visual inspection of the plot before harvesting; • Implementation of forest fire fighting measures according to law; • Best forest practices; • Monitoring performance.
2.6.1	***Appropriate mechanisms are in place for resolving grievances and disputes, including those relating to tenure and use rights, to forest management practices and to work conditions.***
Mitigation measures	Such mechanisms play an important function as a safety net for sufficient performance on social and cultural aspects of Sustainable Forest Management and in complying with other indicators of SBP standard 1. • The aim is to solve grievances and disputes before the harvesting operations commence (or not to buy from the disputed plots).

	• Futerra makes clear to employees and stakeholders that any complaint or comment related to feedstock supply is taken very seriously, to ensure sufficient performance on legality and social aspects of Sustainable Forest Management. • Futerra has a complaint procedure and keeps records. The feedstock suppliers are also required (signed supplier declaration) to actively implement a complaint procedure and keep records. • Futerra monitors the harvesting operations of its feedstock suppliers and checks their records on Complaints and Comments. Proactive interviews with relevant stakeholders, such as land owners on submitted comments (orally and in writing), and assesses if complaints were dealt with sufficiently. • The results of the inspections have direct influence on the 'SBE program approved' status of feedstock suppliers.
2.8.1	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that appropriate safeguards are put in place to protect the health and safety of forest workers (CPET S12).***

Mitigation measures	Futerra has a control system and adequate procedures on the health and safety of forest workers. Futerra demands the same from its feedstock suppliers and checks the health safety of harvesting personnel during its monitoring (administrative and field) inspections.
	• Supplier qualification process and inspections of the supplier's administration:
	  ○ Insurances and aptitude forms;
	  ○ Social Security;
	  ○ Present workforce and training (new) personnel;
	  ○ Health and safety procedures;
	  ○ Training records and hiring of specialists;
	  ○ Records of Personal Protection Equipment (PPE) distribution;
	  ○ Records of machinery safety tools and equipment on documental register;
	  ○ Medical record for employment.
	• Field inspection supplier:
	  ○ Protective equipment use;
	  ○ Medical kit;
	  ○ Fire extinguisher;
	  ○ Respect of safety distances;
	• Level of knowledge of personnel.

2.9.1	***Feedstock is not sourced from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks.***
Mitigation measures	Wood from forests converted to plantations, as also wood lands that are converted to non-forest use are not considered SBP compliant. Wood from forests which are not managed according to best practices and which do not safeguard the carbon stocks above (regeneration of forests) and in the ground (degradation of grounds) are not considered SBP compliant. See also indicator 2.2.2. Non-compliance with this indicator can also result in not procuring the feedstock. • Desk assessment, monitoring, and identification – High-risk and 'Important areas for carbon storage'; • Field inspections and possible adaptions of forest management plans; • Limitation of harvesting operations on 'Important areas for carbon storage'. See also indicator 2.1.3.

9.2 Monitoring and outcomes

Regarding forestry in Portugal, Futerra and its suppliers are motivated to cooperate with the forest land owners to implement risk mitigation measures. The evaluations and inspections, together with the developed documents give the possibility to assess if the feedstock can be accepted as 'SBE compliant' feedstock.

Futerra continuously inspects its feedstock suppliers to see if they comply with the mitigation measures. The results of the monitoring system (including the effectiveness of the mitigation measures) were positive, however, because Futerra started operations March 2019, only a selected group of suppliers received guidance and trainings as yet. Suppliers that have proved to work excellently are accepted as 'SBE approved' suppliers. The 'SBE approved' status is however re-evaluated every year and is withdrawn whenever a major non-conformity is found.

Futerra colletcs, amoung other things, the following documents:

- An advanced declaration of the supplier on cooperating on the SBE requirements;
- Operator Economic Registry (RIO) of the supplier and Non-Debt Statements;
- Verification that the bank account belongs to the supplier.

When the areas are acquired from the Portuguese State (public tender), the buyer signs a contract with ICNF. This contract includes the identification of the place, address, area, wood volume, penalties for non-compliance, among others. The execution of the contract will be supervised by ICNF technicians.

During the initial inspection of the forest plots a map is of the plot is drawn, indicating

- Boundary limits;
- Type and age of vegetation / species;
- Roads / access roads to operating locations;
- The results of the field inspection on basis of the checklists.

In addition to the general information collected, visits are conducted with the owner, his representative, or the harvesting company. Possible complaints and disputes related to land tenure rights, harvesting plot size, or forest management practices are indentified and recorded. Feedstock is not procured from any plots with unresolved issues.

SBE approval of primary feedstock suppliers

Site inspections are conducted continuously to check operational performance on mitigation measures in practise. The feedstock suppliers need to show a high level of understanding of the SBP indicators. The evaluations (check lists) before and during the forest operations are carried by the specialists of Futerra.

Futerra's evaluation of its feedstock suppliers, include:

- Checking performance of harvesting operations of feedstock suppliers;
- Awarding the 'SBE approved' status to suppliers that have proven compliance with all SBE requirements;
- Continuous re-assessments of 'SBE approved' status of feedstock suppliers.

The SBE approved status of the supplier, is a requirement for accepting feedstock as 'SBE compliant'. Futerra, however, does not always accept feedstock coming from an 'SBE approved' feedstock supplier as 'SBE compliant'. The supplier still has to show compliance during the field inspections. Futerra's 'SBE approved' suppliers are monitored every time, the ones in the process of probably becoming 'SBE approved' as well. Harvesting companies that are not yet considered as potential 'SBE approved' suppliers are monitored once in a while.

Acceptance and determination of the feedstock

The practical implementation of the risk mitigation measures is a continuous process. Risks and mitigation measures need to be specified up to the level of practical operations. Important is the assessment of the plots prior to harvesting.

Steps taken to guarantee sustainable management:

- Studying publicly available information regarding the plots and their surroundings were harvesting operations are planned;
- Informing feedstock suppliers on found results on possible sustainability risks;
- Onsite assessment of the plots and their surroundings prior to harvesting, indication of the findings on a schematic map;
- Checking possible local interests and future land use plans;
- Evaluating the risks and possible impacts of the harvesting operations;
- Necessary adaptions to the operational plans are developed and proposed;
- Records are kept on the investigation of the plot and its surroundings and the performed measures.

Inspections include the harvesting activities of feedstock suppliers (field inspections) and the administration of the feedstock suppliers (office inspections). Considering the situation in Portugal, not all feedstock provided by the 'SBE approved' feedstock suppliers automatically becomes SBP-compliant feedstock. There are factors the 'SBE approved' suppliers are responsible for, and those that are beyond their reach (for example, landowners can have interests that conflict with the SBE requirements).

Futerra does not categorise feedstock as compliant, when:

- The harvesting operations do not comply with the SBP requirements on sustainability (Standard 1).
- Future management of the land does not comply with the SBP requirements on sustainability, for example, because land conversion to agricultural or urban use is planned.

10 Detailed Findings for Indicators

Table 10.1 The principal detailed findings for the indicators

1.1.1	**The Biomass Producer's Supply Base is defined and mapped.**
Low risk	The supply base is clearly defined, it is Continental Portugal. Continental Portugal has no disputed areas.
1.1.2	**Feedstock can be traced back to the defined Supply Base.**
Low risk	The origin can be found on basis of delivery documents for raw materials. Regarding pine, the felling phytosanitary manifest (NMP manifest) includes the identification of the area of forest felling. Delivery bills identify the origin of the transport, which are sufficiently accurate, as Futerra obtains the primary material directly from the forests. These are possible to trace back to the origin. If the indicated area on the delivery bill is not the forest land itself, it is at least the Freguesia (minimum administrative division). In scope of this SBE are only primary feedstock deliveries. Forest Harvesting Companies register themselves on a digital platform managed by the Forest Authorities (ICNF). For all supplies, manifests are filled in and submitted to the General Management of Forest Resources. In Portugal, every transport that takes place in the supply chain needs is reported.
1.1.3	**The feedstock input profile is described and categorised by the mix of inputs.**
Low risk	Felling manifests and delivery documents require the operator/sender to identify delivered volumes, tree species (basic indication), and feedstock type. The supply chains are short; the delivered feedstock is checked and categorised. In scope of this SBE are only primary feedstock deliveries.
1.2.1	***The Biomass Producer has implemented appropriate control systems and procedures to ensure that legality of ownership and land use can be demonstrated for the Supply Base***
Specified Risk for areas without cadastral data	In Portugal, around 97% of forest land is private (land owned by individuals, communities and companies). Most part of the protected and classified areas are located on private lands. There are no cadastral data available for 47% of all the lands, and the situation is difficult due to the very many landowners, who own very small forest parcels in Portugal. There are discrepancies between registered and actual ownership rights. Wood lands can also have been impounded by the government. For practical reasons landowners sometimes sell or transfer (inherited) parts of their property, without registering the change to the government. FSC certified wood harvesting companies gave examples where landowners tried to harvest more than was theirs. Such events, however, are normally dealt with between the stakeholders themselves and not brought to court. Many landowners live far away from their (inherited) forest plot and some do not know precisely where their land is located. This is a problem for harvesting companies. There is a specified risk, concerning the ownership of the land and the precise borders of the plot for areas without cadastral data.
Low risk for plots with cadastria data	The Real Estate Cadastre (Cadastro Predial), the Finances Matrix (Matriz das Finanças) and the Real Estate Registry (Registo Predial) constitute an inseparable part of the management of properties. The usual way to identify the properties is by the Real Estate registry (Caderneta Predrial), which is an extract or datasheet from the Real Estate Matrix of the Finances Department. The presence of the cadastral data make is very plausible that the ownership of the forest plot and the borders of the harvesting operations will be correct, and clear to all stakeholders.

1.3.1	***The BP has implemented appropriate control systems and procedures to ensure that feedstock is legally harvested and supplied and is in compliance with EUTR legality requirements.***
Low risk	A harvesting notice (manifesto) is obligatory for all forestry products gathered for commercial use. It is submitted to the forest authorities (ICNF). The Portuguese Authority for ensuring implementation of the EUTR is Institute for Nature Conservation and Forests (ICNF). The enforcement authority is the National Republican Guard (GNR). From January 2015 to April 2016 ICNF has conducted 113 inspections with no contraventions. Also for the same period GNR has conducted 265 inspections with one contravention.
1.4.1	***The Biomass Producer has implemented appropriate control systems and procedures to verify that payments for harvest rights and timber, including duties, relevant royalties and taxes related to timber harvesting, are complete and up to date.***
Low risk	In Portugal only the most common taxes (value added tax (VAT) and income taxes (IRS and IRC)) are applicable to timber harvesting, just as for any other economic activity. No payments for harvesting rights, nor duties, nor royalties apply. The payment of VAT is a simple requirement that is verified by both entities (seller and buyer). The fiscal authority Autoridade Tributária makes joint inspections on roads together with the GNR. No specific evidence of irregularities have been identified in relation to the payment of VAT and income taxes in the forest sector. It is commen practise in Portugal to check the Economic Operator Registration of companies, and the declarations of Non-Debt and Social Security. Futerra only pays via the bank.
1.5.1	***The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is supplied in compliance with the requirements of CITES.***
Low risk	There are no tree species in Portugal listed by CITES. Other species are protected and their living areas have been identified. Portugal has implemented CITES in legislation and online tools.
1.6.1	***The Biomass Producer has implemented appropriate control systems and procedures to ensure that feedstock is not sourced from areas where there are violations of traditional or civil rights.***
Low risk	In Portugal, there are no indigenous or other people in Portugal that claim traditional rights to lands, forests and other resources. There is also no ongoing (armed) conflict. Portugal scores well in several international indexes.
2.1.1	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that forests and other areas with high conservation values are identified and mapped.***
Specified Risk for HCV 1 & 3	HCV 1 – Species diversity Because of the main characteristics of forestry in Portugal, in which the forest plans and maps practically do not have to / are not considered by the small-holders. The scope of PROF, RNAP and SNAC are macro-scale assessments of the significant biodiversity values. The identification of precise HCV attributes might not fall under the scope of these assessments. Outside SNAC and RNAP, where less information is available, the risk is specified as well, because field work on finding the HCVs in practice is not conducted by the small-owners. HCV 3 – Ecosystems and habitats Because of the main characteristics of forestry in Portugal, an extra effort is required to identify and map these values. Internet sources, as well as the situation on the ground need to be studied.
Low risk for HCV 2, 4, 5, and 6	HCV 2 – Landscape-level ecosystems and mosaics have been sufficiently mapped. HCV 4 – Critical ecosystem services HCV 5 – Community needs

	HCV 6 – Cultural values There are no indigenous people in Portugal, but it is important to be open to the interests of the (local) population and social-economic functions of the forests and woodlands (including agricultural or municipal functions). Cultural features are identified and sufficient buffers are applied. Under control are the Rede Nacional de Áreas Protegidas (RNAP), National System of Classified Areas (SNAC), Important Bird and Biodiversity Areas (IBAs), and some other HCV areas designated as protected at the national or EU level (Natura 2000).
2.1.2	***The Biomass Producer has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.***
Specified Risk for HCV 1 & 3	HCV 1 – Species diversity Because of the main characteristics of forestry in Portugal, where many small-holders do not have to consider the recommendations stated in regional forestry plans and often clear-cut their forest stands or eucalyptus plantations without considering ecosystems and habitats, there is a specified risk that forest operations on private and communitarian grounds not managed by ICNF could harm species diversity. Special attention should be given to the National System of Classified Areas (SNAC) and to the Important Bird and Biodiversity Areas (IBAs). HCV 3 – Ecosystems and habitats Because of the main characteristics of forestry in Portugal, there is a specified risk for damaging ecosystems and habitats in private and communitarian forest areas not managed by ICNF.
Low risk for HCV 2, 4, 5, and 6	HCV 2 – Landscape-level ecosystems and mosaics have been sufficiently mapped. HCV 4 – Critical ecosystem services HCV 5 – Community needs HCV 6 – Cultural values Threats to forests located in critical areas in river basins, such as floodplains and steep areas, are defined and mapped in REN-National Ecologic Reserve. Cultural values are broadly considered legally recognized and enforced. Following several surveys on the fragilized state of cork and holm oak stands, for example, there were developed various processes to improve forest management practices, which were launched by the involved companies. This includes a variety of contents and formats such as codes of good forest practices, but also pest and disease identification guides.
2.1.3	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.***
Specified Risk	Futerra considers all pine stands as forests and eucalyptus and poplar stands as plantations. Futerra checks if forests have been converted to plantations after January 2008, or are being converted to plantations or other land use after current forest operations. Over the last decades, Portugal has a clear negative trend concerning land covered by forests and plantations. The conversion of forests to urban and agricultural use is significant. Land covered by eucalyptus plantations has increased 13% from 1995 to 2010. They became the dominant type of frorests and plantations in Portugal. Pinus pinaster forests have decreased 27% (regarding the total surface) in the same period. The development of forest energy crops is officially not permitted in Portugal. Recent and old legislation tries to contain the expansion of eucalyptus plantations, allowing new plantations only as compensation for areas previously occupied by eucalyptus. However, there are no assurances, new eucalyptus plantations from after January 2008 are not already maintained or harvested today. Moreover, forest fires result in instant harvesting of plantations, regardless of their age. Besides, poplar and other tree species can be plantations and the new law only covers eucalyptus. In practise, it will sometimes be very difficult to determine if illegal conversion to eucalyptus took place, because the tree species regenerates aggressively after forest fires.

	Any planting/replanting of forest species, independently of the area of intervention that alters the dominant species (including the conversion of natural forest to plantations) is subject to an authorization by ICNF.
2.2.1	***The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.***
Specified Risk	To most small owners and most of the forest lands, no forest management plan applies, the regional forest management plans apply only to plots above a certain size (from 25 ha to 100 ha, depending on the region). Forest management plans are, however, always obligatory for community-owned and public areas. Special attention needs to be given to plots smaller than the minimum threshold for the mandatory Forest Management Plan (PROF) and outside the SNAC. In exceptional cases forest owners do have a forest management plan. Environmental Impact Assessments are only required for large forest harvesting plots (>50 ha.); such operations are seldomly executed.
2.2.2	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is sourced from forests where management maintains or improves soil quality (CPET S5b).***
Specified Risk	In approximately half the country there is a risk of degradation of (dry) soils, mainly due to previous land-use practices and choice of introduced tree species. The problem of desertification has existed for centuries and has now become worse due to climate change. The plantations of eucalypt need fertilisation or deplete the soil. Soil quality also depends on the availability of fresh water. The Portuguese forest sector sometimes performs poorly on practices regarding soil conservation, leading to a higher risk of erosion and to a degradation of soil productivity. This aspect is insufficiently dealt with in Portuguese forestry legislation. The majority of the forest plots are owned by small-holders, who are not obliged to study regional plans, nor do an environmental impact assessment. In the last half a century, the area of susceptibility to desertification clearly expanded in the mainland territory, moreover this problem is only increasing in severity. The FAO- Land Degradation Index for mainland Portugal (2000-2010) indicates that it has 32.6% degraded lands. Government policies have not prevented the expansion of commercial, intensive (eucalyptus) plantations on sensitive soils, contributing to the expansion of decertified areas. Today, 63% of the mainland territory is classified as areas susceptible to desertification.
2.2.3	***The Biomass Producer has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state (CPET S8b).***
Specified Risk	In Portugal, key ecosystems and habitats are mostly located in Protected Areas and in Classified Areas (Natura 2000). However, approximately 2/3 of classified areas are not included in protected areas of the National Network of Protected Areas. Besides, there are key ecosystems and habitats outside Protected and Classified areas. In practise, landowners and harvesting companies often have little knowledge of key-habitats and about habitats that need to be conserved. The small landowners are not bound to forestry plans nor to much regulation on this point. The situation with many smallholders and the overall conservation status trends of habitats, as well as the number of attributes from which the conservation trends are unknown, imposes a risk to be assessed as specified.
2.2.4	***The Biomass Producer has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).***

Specified Risk	the protected areas and Natura 2000 sites covers 2.017.803 ha meaning 20.47% of the territory. All classified habitats, besides priority ones included on HCV, must be included in this indicator. Approximately 3 600 species of plants are found in Portugal, 69 taxa of terrestrial mammals, a total of 313 bird species (of which around 35% are threatened), and 17 amphibians and 34 reptile species. Some of the main threats to the biodiversity of Portugal include: destruction of habitats; pollution; overexploitation; invasive alien species; urbanization; and forest fires. Biodiversity is declining, some reasons are: • Only few regulations apply to small-holders and • The aggressive and exhaustive nature of eucalyptus vegetations.
2.2.5	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that the process of residue removal minimises harm to ecosystems.***
Low risk	In Portugal forest residues removal from forests is regulated – loggers and owners are responsible for residues removal according to fire and phytosanitary policies.
2.2.6	***The Biomass Producer has implemented appropriate control systems and procedures to verify that negative impacts on ground water, surface water and water downstream from forest management are minimised (CPET S5b).***
Specified Risk	Most forest harvesting operations are not bound to obligatory forest management plans or regulations due to their size. The minimal thresholds by law are 10 ha or more. 10 ha can be considered a large plot, regarding the populated and hilly countryside of Portugal. A clear-cut area of less than 10 ha can create runoff and erosion hazards. The landscape could create dangerous situations; residents could be living in the valley. Small-owners are not obliged to consider such risks. This risk applies to all private, and communitarian forest areas, which are not managed by ICNF. The ICNF Handbook for forest best practices defines: 'In the areas surrounding the water lines the risk of erosion is often very high, since these are areas of concentration of rainwater runoff. In these bands (with a minimum width of 10 meters for each side, as stated in the legal definitions and conditions of legal limits (Decree-Law no. 468/71, of 5 November) a strict prevention of erosion phenomena shall be performed, and it is therefore essential to adopt measures to protect it, such as maintaining all or a significant part of the vegetation and not perform any mobilization of the soil.' This requirement always applies, regardless of the size of the forest harvesting plot.
2.2.7	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that air quality is not adversely affected by forest management activities.***
Low risk	The authority on air quality is the Portuguese Environment Agency, law-enforcement is carried out by SEPNA (National Republican Guard) and Nature Guards and Vigilantes. Forest equipment must comply with EU directives about air pollution. Forest management activities are not considered to be a source of air pollution. Forest residues are however sometimes allowed to be burnt onsite (a permit is needed).
2.2.8	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that there is controlled and appropriate use of chemicals, and that Integrated Pest Management (IPM) is implemented wherever possible in forest management activities (CPET S5c).***
Low risk	EU Directive n.º2009/128/CE, of 21/10 and Law nº 26/2013 from 11 April deal with the use of agrochemicals. Seldom chemicals are used in Portuguese forests, their use are strictly restricted to a few possible cases. There are a few homologate products in use for the most important phytosanitary forest plagues and diseases. Pine processionary and the eucalyptus snout beetle are exterminated with these chemicals, but in both cases also biologic methods are applied.

	The use of fertilisers is common in some business models, mainly related to eucalyptus plantations.
2.2.9	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that methods of waste disposal minimise negative impacts on forest ecosystems (CPET S5d).***
Low risk	The legal framework for waste disposal is based on EU Directive n.º 2008/98/CE. The Portuguese Environment Agency is the main authority. Law-enforcement authorities like SEPNA (National Republican Guard) and Nature Guards and Vigilantes deal with waste disposal issues in practice. Municipal authorities can apply rules to implement applicable legislation. Waste disposal problems in Portugal exist, but are dealt with appropriately.
2.3.1	**Analysis shows that feedstock harvesting does not exceed the long-term production capacity of the forest, avoids significant negative impacts on forest productivity and ensures long-term economic viability. Harvest levels are justified by inventory and growth data.**
Low risk	The analyses of statistical information available (of 2010 and 2015) for average nett increment shows that actual harvesting volumes do not exceed sustainable levels. However, harvest levels are not justified by inventory and growth data in many cases at a forest level. At the stand level there are forest owners that harvest eucalyptus stands before the appropriate harvesting time, not following the best practices and the silvicultural models defined by the PROF. New legislation limits the possibility to convert to eucalyptus plantations, what improves the long-term economic viability of the sector.
2.3.2	***Adequate training is provided for all personnel, including employees and contractors (CPET S6d).***
Specified Risk	Despite legal requirements, Portugal still performs poorly on work safety. The National Strategy for Forests states that the focus on the professionalization and training is of key importance. A legal obligation is that every employee should obtain 35 hours of training per year. A centre for forestry professional training under the direct management of the ICNF and has as main objective the training and professional enhancement, with special emphasis with regard to forestry operations. Authorities with specific jurisdiction for licensing and inspecting the provisions of health and safety at work legislation in Portugal are: ACT (Working Conditions Authority); DGS (General Directorate of Health); and ANPC (National Civil Protection Authority). ACT has developed a set of initiatives and training projects aimed at the forestry sector. The publication of ACT on occupational accidents does not show a trend of improvement yet. Information is not listed separately for the primary sector, there are no separate statistics on the forest sector.
2.3.3	**Analysis shows that feedstock harvesting and biomass production positively contribute to the local economy, including employment.**
Low risk	The biomass sector in Portugal is complementary with other wood industries, as it uses and processes only low quality wood and forest residues and secondary feedstock. The biomass producers create a market for these kinds of remaining forest and wood industry residues. This market makes forest thinning feasible, as also creates a market for cleaning eucalyptus stands. Ever more people have a job at a biomass producer in Portugal, and the sector is pushing sustainability of the whole sector forward through strict and critical certification programs such as SBP. All these activities decrease the chance of forest fires, which are perceived as the greatest threat to local communities. Futerra, in specific, contributes significantly to the local economy, as it is an exceptionally large investment project and production unit and the production process use an innovative technology (torrefaction) that makes even more low-grade forest residues usable for pellet production. The technology also adds more value to the end product. Futerra contributes to the increase in employment, directly (app. 50 jobs) and indirectly.

2.4.1	**The Biomass Producer has implemented appropriate control systems and procedures for verifying that the health, vitality and other services provided by forest ecosystems are maintained or improved (CPET S7a).**
Low risk	Forest as a multifunctional space is of high value, whether commercially or in terms of the environmental services it offers. In Portugal there are various important forest areas in terms of protecting services by forest ecosystems, such as river basins and soil conservation. These areas are included in REN (National Ecological Reserve) and PROFs (Regional Forest Management Plans), which are mapped and available at the municipal level. This are useful tools identifying critical areas and contributing to the sustainability of services provided by forest ecosystems. In Portugal the 'health, vitality and other services provided by forest ecosystems' is in many cases of importance to the local population. Poor forest management can create a conflict of interests. Considering the available information in the PROFS and REN, as also the specified risk designations of other indicators, such as 2.2.2. (soil quality), 2.2.6 (erosion) and 2.6.1 (dispute management) this indicator is low risk.
2.4.2	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that natural processes, such as fires, pests and diseases are managed appropriately (CPET S7b).***
Specified Risk for *Fire fighting*	The implementation of forest management plans is not obligatory for most forest plots and plantations. There are regulations on cleaning forest debris, in particular regarding eucalyptus stands. However these are often not executed in full, nor well. Every year the population faces the devastating power of forest fires in Portugal. Poor management of eucalyptus stands are one of the main reasons of the fires. The forests and in particular the eucalyptus plantations are insufficiently managed to prevent forest fires. The biomass sector in general, and Futerra in specific, create a market for low grade organic residues from forests and plantations. Recently the government has issued new laws on limiting the conversion of forests to eucalyptus plantations and preventing forest fires, but law-enforcement on implementing regulations on cleaning forest debris and maintaining eucalyptus plantations is insufficient.
Low risk for other natural processes	The government has in place obligatory mitigation measures against pests and diseases. A National Action Plan for Control of Pine Wilt Disease (NMP in PT) Bursaphelenchus xylophilus and its vector insect Monochamus galloprovincialis is in place. This focuses mainly on Pinus pinaster (23% of all forest areas) but applies also to other host conifers (*Abies spp., Cedrus spp., Larix spp., Picea spp., Pinus spp, Pseudotsuga spp., Tsuga spp*) (8% of all forests). For these species there is obligation of previous communication of any felling and/or transportation of wood affected by a pest. The phytosanitary manifest on coniferous species is obligatory for all transports to commercial processing companies.
2.4.3	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that there is adequate protection of the forest from unauthorised activities, such as illegal logging, mining and encroachment (CPETS7c).***
Low risk	Several sources confirm that unauthorized activities such as illegal logging, mining and encroachment are not a significant problem in Portugal. Small problems as illegal littering, loose dogs, unauthorized sport activities, theft of firewood or fruits, and poaching do occur, but several sources state that law-enforcement is sufficiently in place.
2.5.1	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that legal, customary and traditional tenure and use rights of indigenous people and local communities related to the forest are identified, documented and respected (CPET S9).***

Low risk	97% of Portuguese forests are private property. 8% of the private forest are under communitarian management (Baldios) based in old customary and traditional tenure rights and regulated by a specific law. Customary rights consist of access to water sources established for a long time as practice, passage through private property that is used traditionally by a certain communities. Customary rights don't consist of collecting mushrooms, plants or pine cones in a property belonging to someone else. Article 348 of the Portuguese civil code deals with customary rights. In the case of community areas, specific legislation regulates rights of use of common forest areas (Lei dos Baldios). Hunting activities are also regulated by law (Lei nº 173/99). In line with the conclusions of the FSC CW NRA of 2018, Futerra did not find any structural issues regarding customary rights in Portugal.
2.5.2	**The Biomass Producer has implemented appropriate control systems and procedures for verifying that production of feedstock does not endanger food, water supply or subsistence means of communities, where the use of this specific feedstock or water is essential for the fulfilment of basic needs.**
Low risk	There are no indigenous people in Portugal, nor minorities dependant on forests for their livelihood. No practical situations were found where basic needs of people were endangered by forestry operations.
2.6.1	***Appropriate mechanisms are in place for resolving grievances and disputes, including those relating to tenure and use rights, to forest management practices and to work conditions.***
Specified Risk	Considering the main and problematic characteristics of forestry in Portugal, this indicator needs an pro-active approach to perform sufficiently well on all social aspects related to sustainable forest management and best practices (although this topic is addressed in the general legal framework of Portugal in a formal way). The International Trade Union Confederation (IUTC) ranks Portugal has a country that has 'Regular violations of rights'. It is crucial to identify and solve local disputes before the harvesting operations (or e.g. forest fires) commence. Most harvesting companies working in the forest sector do not have complaint and comment procedures, nor keep records on such issues. Some (certified) companies, however, indicated they encounter and solve disputes reguarly.
2.7.1	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that Freedom of Association and the effective recognition of the right to collective bargaining are respected.***
Low risk	Portugal has ratified all eight fundamental ILO conventions. The status on the ILO website for all eight conventions is 'in force', which include the C87 Freedom of Association and Protection of the Right to Organize Convention (1948) on 1977th and C98 Right to Organize and Collective Bargaining Convention (1949) on 1964. These rights are included in the Portuguese constitution (article 56) and labour law. International Trade Union Confederation (IUTC) ranks Portugal has a country that has 'Regular violations of rights'. The government and/or companies would be regularly interfering in collective labour rights. The IUTC indicates there are deficiencies in laws and certain practices which make the violations possible.' Futerra, however, did not witness regular violations of rights in the forest sector till date. The situation in practise is improving and disputes related to work conditions are being resolved according to administrative procedures and labour legislation. Trade unions can help in such disputes.
2.7.2	**The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is not supplied using any form of compulsory labour.**

Low risk	In general this is not an issue in forestry in Portugal, however, the FSC CW NRA of 2018, does quote sources on subtle forms of compulsory labour related to illegal labour and migration. However, it also confirms that the applicable legislation in Portugal covers all ILO Fundamental Principles and Rights at Work and that law-enforcement is being carried through.
2.7.3	**The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is not supplied using child labour.**
Low risk	Up-to-date information about child labour are scarce. In 2001, a study indicated 4,1% of the investigated children were affected by child labour (CNASTI). Half of these children were working in agriculture. The FSC CW NRA of 2018, citates several reliable sources indicating that a considerable percentage of children live below the poverty line in Portugal and that there is a risk of child labour in several sectors (but not in forestry). Futerra considers this risk low, but looming, and does check the minimal age of young people active on the forest plots it inspects. In Portugal the minimum age for employment is 16 years. A minor of 16 cannot be employed, but in some cases exceptions are possible (by law).
2.7.4	**The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is not supplied using labour which is discriminated against in respect of employment and occupation.**
Low risk	Protection against discrimination in labour is prohibited by the Portuguese constitution and the labour code. The authority directly involved in employment rights and conditions is the Work Conditions Authority (ACT) but other authorities are related to this topic as well, for example the Immigration and Borders Services (SEF), and the Social Security Services. Together with the GNR-Republican National Guard and PSP-Public Security Police, they inspect fair and legal employment.
2.7.5	**The Biomass Producer has implemented appropriate control systems and procedures for verifying that feedstock is supplied using labour where the pay and employment conditions are fair and meet, or exceed, minimum requirements.**
Low risk	Payment and employment conditions are covered by the labour code. The framework in Portugal makes it possible that companies and employees have free access to the market; the employment conditions are competitive, but fair and meet, and normally exceed, minimum requirements. Law enforcement is checking labour conditions end the use of an illegal work force.
2.8.1	***The Biomass Producer has implemented appropriate control systems and procedures for verifying that appropriate safeguards are put in place to protect the health and safety of forest workers (CPET S12).***
Specified Risk	Regardless of its legal requirements, Portugal still performs poorly on work safety. Historically, a risk under this category has been present based on a low level of compliance with the requirements for accreditation and/or professional training. Employees have obligatory annual internal and external training sessions (given by certified companies) on workers' safety and health. Many obligations have changed and private entities have started to develop courses for some activities of forest workers. The legal authority for work health and safety is ACT (Working Conditions Authority), which also has a law enforcement role. ACT has been actively involved in improving the level of awareness and competence over the last years.
2.9.1	***Feedstock is not sourced from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks.***
Specified Risk	Ever since January 2008 and in total more than 20 years, data of different reliable sources, for example the FAO and ICNF, indicate a steady trend in decreasing forest area in Portugal of over 1% every 3 years. When forests are converted to other land use the carbon stock is lost. The conversion of forests to urban use is significant, for example. Forest owners can also choose to start an orchard.

2.9.2	**Analysis demonstrates that feedstock harvesting does not diminish the capability of the forest to act as an effective sink or store of carbon over the long term.**
Low risk	National Inventory data indicate that the forests of Portugal are a significant carbon sink, plagued, however by forest fires. The biomass sector creates a market for low-grade forest harvest residues. The activities of Futerra stimulate the performance of timely thinnings, and timely cleaning of accumulated organic debris (of eucalypt stands). These operations stimulate the growth of forest stands and decrease the risk of fire. The feedstock does not come from riparian vegetations in wetlands.
2.10.1	**Genetically modified trees are not used.**
Low risk	Genetically modified trees are not being used in Portugal. There was one project with a genetically modified variant of a eucalipt tree species (*Eucalyptus globulus*) between 1997 – 2001. However, no interest for genetically modified trees has been witnessed ever since.

11 Review of Report

11.1 Peer review

The SBR and SBE has gone through and peer review by Tatiana Savelyeva.

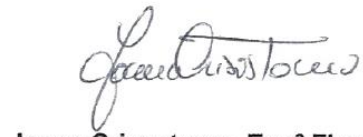
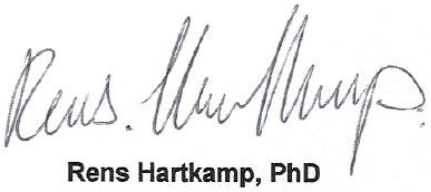
Tatiana Savelyeva has over four years of experience in SBP. She completed forestry engineering studies in Russia, Sweden, and Finland. Tatiana Savelyeva passed the SBP auditor exams in 2017. She prepared around 30 Biomass Producers, including SBE projects in Portugal and Spain.

Tatiana Savelyeva reviewed the SBR, SBE, and SBP procedures and inspection checklists. Improvements on the content were accepted and implemented. Some references were up-dated.

11.2 Public or additional reviews

The SBR and SBE were discussed and sent to a large group of stakeholders for review (more information in Chapter 6).

12 Approval of Report

Approval of Supply Base Report by senior management			
Report Prepared by:	 **Joana Crisostomo, Engª Florestal**	**SFM manager**	
	 **Ana Castro, Engª Ambiente**	**Certification Manager**	
	 **Rens Hartkamp, PhD**	**Consultant**	***24.07.2019***
	Name	**Title**	**Date**
The undersigned persons confirm that I/we are members of the organisation's senior management and do hereby affirm that the contents of this evaluation report were duly acknowledged by senior management as being accurate prior to approval and finalisation of the report.			
Report approved by:	 ***João Paulo Baltazar***	**Director**	***24.07.2019***
	Name	**Title**	**Date**

13 Updates

Initial audit. Not applicable.

13.1 Significant changes in the Supply Base

Initial audit. Not applicable.

13.2 Effectiveness of previous mitigation measures

In the development process of the SBE, additions have been made to Futerra's procedures and evaluation tools. The measures were tested in practise. They proved to be effective.

13.3 New risk ratings and mitigation measures

Initial audit. Not applicable.

13.4 Actual figures for feedstock over the previous 12 months

Futerra started procurement of feedstock March 2019.

The repoting period was from 25-03-2019 – 15-07-2019.

In this period Futerra procured: 0 – 200,000 tonnes of feedstock.

13.5 Projected figures for feedstock over the next 12 months

200,000 – 400,000 tonnes of feedstock.