

Supply Base Report: Glowood Indústria SA

Second Surveillance & Scope Extension Audit

www.sbp-cert.org



Completed in accordance with the Supply Base Report Template Version 1.2

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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1 Overview

Producer name: GLOWOOD - INDÚSTRIA, SA.

Producer location: Parque Empresarial, Lote 1, Expansão 1. Cercal do Alentejo - 7555-999 Santiago do Cacém, PORTUGAL

Geographic position: 37°47'36.1"N 8°41'08.3"W

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Company website: <http://www.glowood.pt>

Date report finalised: 05/Jan/2018

Close of last CB audit: 09/May/2017, Cercal do Alentejo.

Name of CB: NEPCon Spain I C

Translation from English: Yes

SBP Standard(s) used: Standard 1 version 1.0, Standard 2 version 1.0, Standard 4 version 1.0, Standard 5 version 1.0

Weblink to Standard(s) used: <http://www.sustainablebiomasspartnership.org/documents>

SBP Endorsed Regional Risk Assessment: Not Applicable

Weblink to SBE on Company website: <http://www.glowood.pt/>

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

2 Description of the Supply Base

2.1 General description

Glowood – Indústria, SA was founded in May 2011 with the support of IAPMEI through the POalentejo program. Dedicated to the production and marketing of pellets, with strong commitment to the foreign market, since more than 90% of the production is for export.

The company buys roundwood, chips and sawdust, mainly pine (Maritime Pine/*Pinus pinaster* and Umbrella Pine/*Pinus pinea*), as raw material for its manufacturing process. For the drying process, in addition to pine biomass (small logs, bark, waste and leftover), it can also use small roundwood and leftovers of Eucalyptus (*Eucalyptus* spp.) and rarely poplar (*Populus* spp), acacia (*Acacia* spp) and alder (*Alnus glutinosa*).

All wood comes from forested áreas of Portugal, mainly from the districts of Setúbal, Beja, Évora, Lisbon, Portalegre, Santarém, Castelo Branco, Faro, Leiria and Coimbra.

The primary feedstock (roundwood, harvesting waste and other forest waste mainly branches from pruning of umbrella pine) is supplied by approximately 35 small and medium companies which are made aware of and controlled in order to obtain the necessary information about the origin of the management unit, with a compromise stated to that effect.

Suppliers who purchase standing timber and carry out their operations, usually make a selection of material, bigger logs for higher end value processes (sawmills) and small logs and leftovers to other processes, including pellets manufacturing and energy production.

This practice is encouraged by the company, with a supply policy to promote the effective use and sustainability of forest resources. The acceptance of larger roundwood is limited (diameter ≤ 40 cm) and there is a formal agreement with a sawmill, located next to the plant, which receives the larger logs delivered by the suppliers, providing in exchange, sawdust and other waste (lumber rejects, chips, small logs etc.).

The secondary feedstock (woodchips and sawdust) comes from suppliers who deliver the material produced (chips) or sawdust resulting from the sawmilling process, essentially from three sawmills, whose wood supply is also from adjacent forest areas in Portugal.

Thus the company's supply area is restricted to the Portuguese mainland.

In 2017, Glowood produced a total of 51.889 t of pellets, with a level of consumption of raw material in the order of 109.000 t. These are average values for similar companies located in Portugal.

Portugal has a population of about 9.8 million inhabitants and 8.7 million hectares.

According to preliminary data from the latest National Forest Inventory, 2013 (IFN6 - Areas of land use and forest species in mainland Portugal in 1995, 2005 and 2010), the forest land use is the dominant use of the mainland. The Portuguese forest occupies 3.2 million hectares, which corresponds to 35.4% of the country, one of the largest proportions of forested areas of Europe.

Land-Uses in Portugal – 2010

Source: ICNF National Forest Inventory, Preliminary Results, 2013

- 35% Forestry
- 32% Bushland and Natural Pastures
- 24% Agriculture
- 5% Urban
- 2% Inland Waters
- 2% Unproductive

Forest Stands in Mainland Portugal – 2010

Source: ICNF National Forest Inventory, Preliminary Results, 2013

- 26% Eucalyptus/ Eucalyptus spp.
- 23% Corkoak / Quercus suber
- 23% Maritime Pine / Pinus pinaster
- 11% Holmoak / Quercus rotundifolia
- 6% Stone Pine / Pinus pinea
- 2% Oak / Quercus spp.
- 1% Sweet Chestnut Tree / Castanea sativa
- 6% Other Hardwoods
- 2% Other softwoods

The dominant forest species is Eucalyptus, representing the largest area of the country (812,000 ha; 26%), second is Cork Oak (737,000 ha; 23%), followed by the Maritime Pine (714,000 ha; 23%). The area occupied by softwood species corresponds to 31% of the Portuguese forest, the remainder (69%) is occupied by broadleaf species.

Over the period 1995-2010 the forest areas exhibited a decrease of 4.6%, corresponding to a net loss rate of 0.3% / year (10 mil ha / year). The net decrease of forest areas (-150,611 ha) is mainly due to conversion to the land use class "brush and pastures." In addition to this conversion, significant amount of forested land was converted to urban use between 1995 and 2010 (28 000 ha).

Note that although there is a decrease in forest area, the fact that this is not accentuated demonstrates the significant resilience of the forest to large disturbances to which it was subjected to during the review period. On the one hand, the very serious forest fires of the last two decades (more than 2.5 million hectares burned between 1990 and 2012), and on the other, the occurrence of diseases such as the pine wood nematode which has severely affected the maritime pine nationally, forcing excessive harvests due to enforcing of phytosanitary regulations. No other country in Europe has been subject to this level of disturbance.

The decrease of forest area is mainly due to reduction in temporarily treeless areas (burned areas, harvested areas and regenerated areas), with emphasis on increasing the areas reforested, which is explained in part by the action of nature itself (natural regeneration) demonstrating the natural adaptation of the soil to the forest, but also by the action of forest owners who have continued to invest in reforestation.

According to preliminary data from IFN6, the main change of forest species between 1995 and 2010, were maritime pine presenting a decrease of about 263 000 ha (26.9% less). Most of this area became "brush and pastures" (165,000 ha), 70,000 ha to eucalyptus, 13 000 ha in urban areas and 13,700 ha in forest areas with other tree species.

On the other hand, there is an increase of eucalyptus area of about 95,000 hectares. It is also to highlight the increase of umbrella pine (46% in total area and 54% in terms of replanted area).

The change in area of other species has been less significant, especially during the period 2005 to 2010.

The harvest of Umbrella Pine stands takes a leading role in the forestry economy in some regions, particularly in the south (Alentejo), mainly due to the unique characteristics of its main production (pine nuts for the food industry) which has allowed the rapid development of the umbrella pine envelope, which today occupies an important place in the regional and national economy. In the Alentejo region, about 67% of the national production of pine cone and 15% of world production of pinecone occurs.

According to data from the National Strategy for Forests, forest properties in Portugal are mostly private, with 2.8 million hectares, or 84.2% of the total area owned by family-oriented smallholdings and 6.5 % are owned by industrial companies. Public areas correspond to 15.8% of the total, of which only 2% (the lowest percentage in Europe) are the private domain of the State.

The size of the forest estate has a very defined geographical distribution, with a large number of properties located in the north and center of less than 1 hectare in size. It is estimated that there are over 400 000 forest owners in the country.

According to the prospective study for the Forest Sector published by the AIFF (Association for the Competitiveness of Industry Forestry Sector) in 2013, the size of the stands is a key factor in the context of the Portuguese forest, with significant impact on the profitability and sustainability of the activity. In the North and center of the country approximately 54% of this forest area spread over stands of less than 10 ha. The small size of the properties has particular relevance to the two main species whose distribution and harvest are in the central and northern regions:

- In Maritime Pine, 63% of the stands are in areas less than 10 ha and 25% in areas less than 2 ha;
- In Eucalyptus, 50% of forest stands are in properties of less than 10 ha.

Also according to the same study, the Portuguese business structure in the forest industry has some of the most representative European companies in the sector. In the point of view of transactions to the international market for forest and forest-based products, the most important are: paper and cardboard, pulp, cork, wood and resin products and furniture.

The wood sector, particularly softwood for industrial purposes and softwood for sawlogs are essentially based on maritime pine. The pulp, paper and board sector are based mainly on eucalyptus.

According to the Characterization of the Forestry Sector Report 2014 prepared by the AIFF, the trade balance related to the industries of forestry sector had a positive balance of 2,474 million euros in 2013, representing 9.1% of total national exports of goods and 3.4% of the total national imports of goods. The forestry sector represents 2.2% of the total company employees in Portugal and 1.7% of the total employed population.

A breakdown of forestry goods production allows us to observe different trends. The production of maritime pine (softwood for industrial purposes) shows a decrease of 3.6% in value compared to 2011 and for the year 2002 a decrease of 4.5%. In 2012, the production value of wood for sawing was lower than the previous year (-2.3%), due to the price decrease (-2.6%), as the volume has increased (+0.4%) for the third consecutive year;

The production of Eucalyptus (hardwood to mill) maintained the growth trend (interrupted only in 2009), of an increase of 9.2% over the previous year and an increase of 63.4%. This high growth in eucalyptus wood production for industrial use makes this the main forestry goods (representing 36.8%), about 17% higher than the production of softwood for industrial purposes.

Also, according to the AIFP in 2012, the Gross Value Added (GVA) in the forestry increased by 3.9% in volume and 2.4% in value relative to 2011. With regard to the Forestry Production an increase of 4.3% in volume and 3.6% in value in relation to 2011 was recorded. In the same year, the GVA of the forestry sector industries accounted for 1.2% of national GVA, maintaining a significant importance in total manufacturing (11%).

The analysis of GVA by sector reveals a particular negative impact on the timber industry in recent years, with the GVA presenting a reduction of about 40% between 2007 and 2012 (-429 million euros), much lower than reported values for the pulp industry, paper, paperboard and articles thereof (-4%). In the whole period considered (2004-2012) only the sectors pulp, paper, paperboard and articles thereof presents a growth of GVA.

According to Pedro Sebastião Perestrelo de Souza e Holstein Campilho in his thesis Assessment of National Potential for Forest Biomass Utilization for Energy Purposes published in 2010, the trend of loss of socioeconomic sustainability of the Portuguese forestry sector in recent years, when supplemented with a conjecture to encourage the production of renewable energy, translates into a set of developments which enhance the demand for biomass from logging residues for energy use. The demand for biomass tends to be met in the short term, in scenarios substantially sustainable. However, in the medium and long term projection, even without considering significant increases in demand for this resource, results in difficulties to meet existing market demands with conditions for sustainability as those experienced in the short term.

The pine forest is distributed throughout the country with Maritime Pine occupying 23% of the forest area of the mainland, mostly located in small areas and Umbrella Pine occupying 6% of the total forest area of continental Portugal, with its main distribution in the south of the country.

Maritime Pine (*Pinus pinaster*) forests are usually managed in stands of trees, generally of seed or seedling origin, that normally develop a high closed canopy, and can be managed using natural regeneration or by sowing or planting.

In cases of natural regeneration and planting, the initial phase is intended to gradually reduce the density of plants to 1200-1600 trees / ha. Initially in groups and then selectively with mechanical or manual harrowing or slashing. After 10 years the trees can be pruned (1-2) and thinned (2-3) utilizing the residual material, leaving a final cut (30-40 years) of about 500-600 trees / ha, while proceeding to also control unwanted vegetation mechanically or manually harrowing or slashing. In the case of natural regeneration, during the final cut about 25 large trees / ha are left as seed trees.

In the case of a plantation, the ground is prepared with disking, ripping and harrowing along the contours in areas with slopes up to 30%, on steeper slopes the site preparation and planting is manual. The planting density depends on the site condition, usually 1200 to 1600 seedlings / ha.

After 10 years the trees can be pruned (1-2) and thinned (2-3) utilizing the residual material, leaving a final cut (30-40 years) of about 500- 600 trees / ha, while proceeding to also control unwanted vegetation mechanically or manually harrowing or slashing. In the case of natural regeneration, during the final cut about 25 large trees / ha are left as seed trees.

In Umbrella Pine (*Pinus pinea*) silviculture, the intertree distance at planting depends on the future purpose of the stand: production of wood or cones (pine nuts).

For the production of wood intertree distances of 4x3 m. are used to promote natural pruning. The distance between rows should allow the passage of agricultural machines mainly used for brushing. In stands oriented to cone production (with or without using grafting technique), the trees should grow in favorable light and ventilation, in order to develop large canopies that favor the production of pine cones. The most commonly used intrertree distance is (5x5), but also (6x5), (6x6) and (8x6) are used.

In areas well-adapted for Umbrella Pine, natural regeneration can be used. The natural regeneration results in a high number of plants per hectare. Thus a selection of the best developed plants must be done promptly.

Stand tending is done through pruning and thinning's that produce considerable amount of woody material. The first pruning should occur after 5-6 years after planting. The 2nd pruning should occur between 10 and 12 years, taking into account the development of the stand. This pruning often coincides with the 1st thinning. The 3rd pruning is between 20 and 25 years, coinciding with the 2nd thinning. The final cut is usually done after 40 years.

Eucalyptus silviculture (mainly *E. globulus*) is based on planting and the clear-cutting the forest, usually between 10 and 15 years, utilizing all of the wood with or without the bark (simple coppice). Priority is given to conducting coppice for 1, 2 up to 3 rotations, selecting shoots after each cut. If last cut is not deemed productive then the area is re-planted.

In mixed stands with Maritime Pine, the system is based on thinning the forest in order to leave a percentage of remaining trees for future use when the stumps of the harvested Eucalyptus trees produce shoots (composed coppice)

Planting of eucalyptus starts with the site preparation, which normally consists of destroying and incorporating existing woody material, followed by tillage (disking, ripping, and harrowing).

Fertilization depends on the site and the owner conditions. The planting is carried out to a density typically between 1100 and 1300 seedlings per hectare. Between the second and sixth year a second fertilization and competing vegetation control is recommended.

The selection of shoots is made during the second and third year, maintaining a number of stems per hectare corresponding to the initial density of planting.

In most cases, the harvest occurs between 10 and 15 years. The basic logging operating system consists of utilizing a tractor processor and a tractor loader, and usually manual felling with a chainsaw.

The Poplar is currently cultivated on a small scale. Given the nature of the soil (deep and wet), site preparation is done in late summer or early autumn. The intertree distance commonly used is 4x4 meters. The 1 year old plants from cuttings are planted as deep as possible (0.5 meters) in order to develop a good root system.

Usually there is a heavy competition from weeds that requires manual weeding two times, complemented with shallow harrowing during the first four years. During the first 3 to 4 years it is very important to carry out pruning, to prevent forking and add value to the wood, whose final use are veneer.

The Poplar can be managed in coppice, with clear cuts made from 14 years, or usually older, depending on the purpose and final use opportunities.

Acacia is an invasive species in Portugal, appearing in pure or mixed formations, and it is not permitted to plant and cultivate. However, using it is allowed.

The Forest Management Plan (FMP) is a planning instrument within the legal framework provided by the Forest Policy Framework Law (Law No. 33/96 of August 17) and later by Decree-Law No. 16 / 2009 of January 14, which approves the legal framework of management plans, management and interventions of forest areas (repealing Decree-Law No. 205/99 of June 9, which governed the elaboration process, approval, implementation and modification of FMPs to be applied to forest areas).

The dynamics of the FMP development processes and the PEIFs (Specific Plans for Forest Intervention) in a more general way to private and public forest areas is still young, having started with the approval of the Regional Forest Management Plans (PROF) in 2006-2007, reinforced with the conditions of having the FMPs approved as eligibility criteria for access to support for forest investment programs under the PRODER, together with the development of forest certification processes.

In April 2013 (last available information ICNF), there were 2,266 approved FMPs (1,522,195 hectares), representing 44% of the forest area in Portugal.

In Portugal it is not necessary to have specific authorization for harvesting except for cork oak, holm oak and logging in protected or classified areas. When harvesting softwoods (Pine and others) it is necessary to produce a harvest manifest, pruning and transport of coniferous wood (Decree-Law 123/2015 of 3 July), which concerns the application of the extraordinary measures of plant protection essential to the control of the pine wood nematode (PWN).

CITES – (Convention on International Trade in Endangered Species of Wild Fauna and Flora) lists the following species in Portugal and Spain, not including timber species:

Portugal:

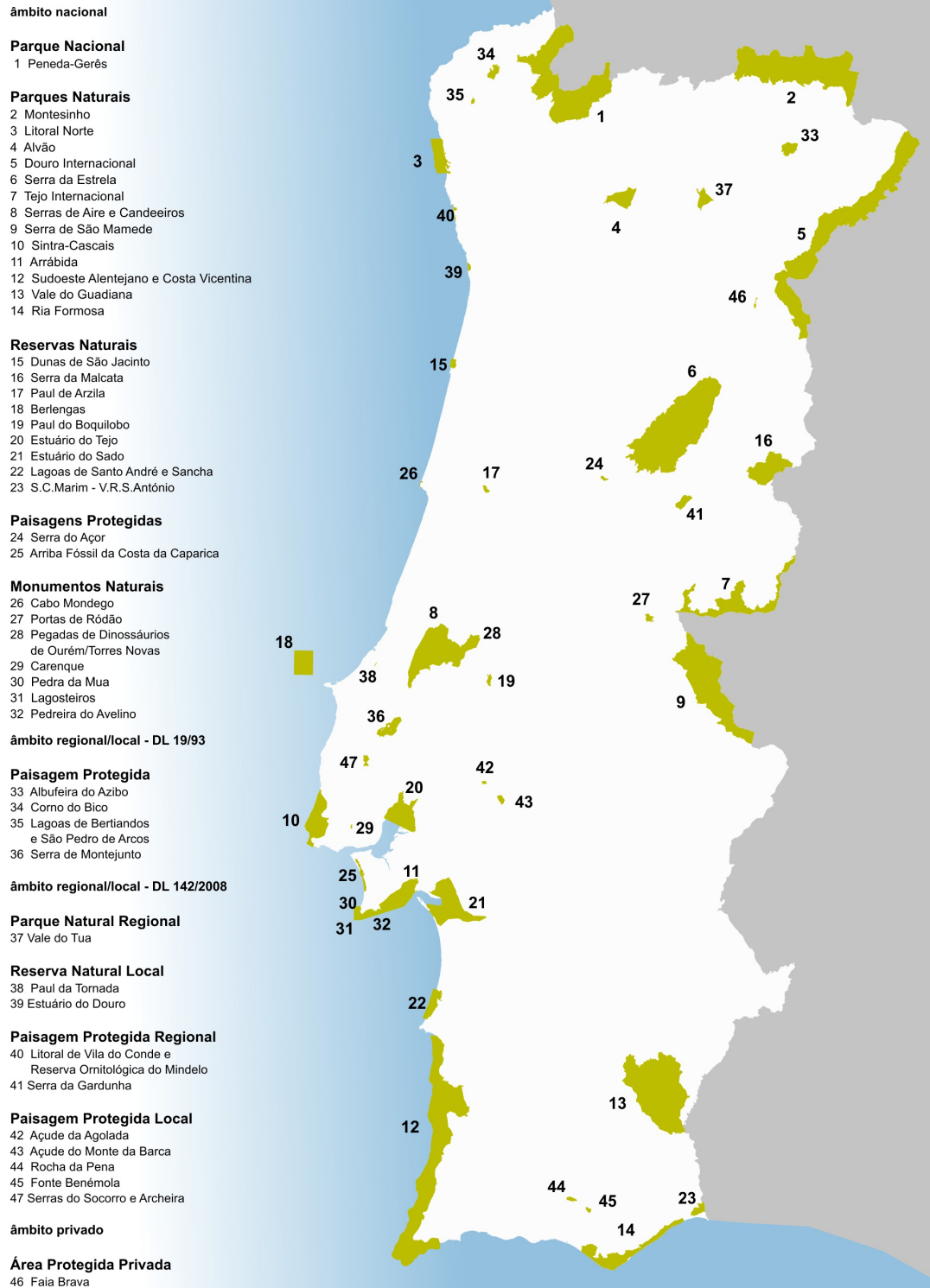
<i>Antipatheserinaceus</i>	<i>Stichopathes dissimilis</i>	<i>Stichopathes richardi</i>
<i>Stichopathes robusta</i>	<i>Stichopathes setacea</i>	<i>Leiopathes expansa</i>
<i>Tanacetipathes cavernicola</i>	<i>Tanacetipathes squamosa</i>	<i>Tanacetipathes wirtzi</i>
<i>Paracyathus arcuatus</i>	<i>Leptopsammia formosa</i>	<i>Madracis profunda</i>
<i>Crypthelia medioatlantica</i>	<i>Crypthelia vascomarquesi</i>	<i>Errina atlantica</i>

<i>Errina dabneyi</i>	<i>Lepidopora eburnea</i>	<i>Euphorbia despoliata</i>
<i>Euphorbia longifolia</i>	<i>Euphorbia pedroi</i>	<i>Euphorbia piscatoria</i>
<i>Euphorbia stygiana</i>	<i>Dactylorhiza foliosa</i>	<i>Goodyera macrophylla</i>
<i>Orchis scopulorum</i>	<i>Platanthera micrantha</i>	

In the "Red List" of the IUCN (International Union for Conservation of Nature and Natural Resources), posted 891 species for the continental territories of Spain and Portugal (Iberia), of which 76 have forestry activity as one of the threats:

<i>Ammoidespusilla</i>	<i>Anarrhinum longipedicellatum</i>	<i>Andrena curtula</i>
<i>Andrena fulva</i>	<i>Andrena gredana</i>	<i>Antirrhinum lopesianum</i>
<i>Arabis sadina</i>	<i>Aristolochia paucinervis</i>	<i>Armeria rouyana</i>
<i>Arnica montana</i>	<i>Asphodelus bento-rainhae</i>	<i>Bunium bulbocastanum</i>
<i>Calopteryx virgo</i>	<i>Candidula belemensis</i>	<i>Centaurea fraylensis</i>
<i>Clytus tropicus</i>	<i>Culcita macrocarpa</i>	<i>Dactylorhiza elata</i>
<i>Dianthus marizii</i>	<i>Elona quimperiana</i>	<i>Eryngium viviparum</i>
<i>Euphorbia transtagana</i>	<i>Festuca brigantina</i>	<i>Festuca summilusitana</i>
<i>Flavipanurgus granadensis</i>	<i>Flavipanurgus ibericus</i>	<i>Flavipanurgus venustus</i>
<i>Helicigona lapicida</i>	<i>Juncus valvatus</i>	<i>Leiostyla anglica</i>
<i>Lucanus barbarossa</i>	<i>Lynx pardinus</i>	<i>Malus sylvestris</i>
<i>Narcissus asturiensis</i>	<i>Narcissus cyclamineus</i>	<i>Narcissus triandrus</i>
<i>Neottia nidus-avis</i>	<i>Nomada similis</i>	<i>Oestophora lusitanica</i>
<i>Ononis maweana</i>	<i>Paeonia officinalis</i>	<i>Picris willkommii</i>
<i>Reitterelater bouyoni</i>	<i>Silene longicilia</i>	<i>Spermodea lamellata</i>
<i>Stenagostus laufferi</i>	<i>Thorella verticillato-inundata</i>	<i>Thymus capitellatus</i>
<i>Veronica micrantha</i>		

Map of the infrastructure of National Protected Areas:



Product Group	Certification	Nº Suppliers	Input Group	Format	Species	Quantity (t)	%
Controlled Feedstock	FSC CW (*)	32	Primary feedstock from forests (products or residues)	Roundwood	Maritime pine Umbrella pine Poplar and Acacia	34.300,68	31,76
			Primary feedstock from forests (products or residues)	Roundwood	Eucayptus	2.837,28	2,63
			Primary feedstock from forests (products or residues)	Wood chips	Maritime pine Umbrella pine	38.150,02	35,33
			Wood industry residues (secondary feedstock)	Wood chips Sawdust Wood offcuts	Maritime pine	27.822,40	25,76
			Primary feedstock from forests (products or residues)	Chips	Maritime pine Umbrella pine	3.336,96	3,09
SBP-compliant Primary Feedstock	FSC	1	FSC 100%	Roundwood	Eucayptus	1.230,96	1,14
SBP-compliant Secondary Feedstock	FSC, PEFC	1	FSC Mix	Wood chips Sawdust	Maritime pine	315.02	0,29

(*) Non-certified material controlled under the company's Chain of Custody Management System, which is certified according to the FSC-STD-40-005 Standard for Company Evaluation of FSC Controlled Wood.

2.2 Actions taken to promote certification amongst feedstock supplier

The company has contacted each of its suppliers and affirmed the importance of providing certified material (FSC or PEFC), pointing out the increasing demands of markets and consumers regarding the legal and sustainable source of forest products, including biomass for energy production.

The implementation of the **Supplier Qualification and Control Program** is also considered an important action in the sense of promoting forest certification, since the qualification of the suppliers represents the fulfillment of several requirements applicable to the certification, also having as support Good Practice Guides, applicable to both suppliers and forest producers and managers, which have been drafted and have been distributed.

Qualified suppliers have their legal status proven, practice and propagate Good Forest Practices, collect and send prior information about the area of origin of the material to be supplied and are subject to **Glowood's** follow-up and control actions.

The person responsible for the **Supplier Qualification and Control Program** has also informed the producers and forest owners that added value is gained by managing their areas as certified, either individually or through group initiatives recognized by the company.

In addition, the company's employees have participated in events related to management and forest certification, trying to gather information and give their contribution to the development of the subject, especially in Portugal.

2.3 Final harvest sampling programme

In 2017, it is estimated that 6,91% of wood material consumed may have originated in final fellings, being 2,4% from stands with an expected rotation length of more than 40 years, according evaluation made on reception of the material. It refers essentially to the Pine roundwood, especially of Umbrella Pine (*Pinus pinea*) managed with main objective of producing cones (pine nuts).

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

N.A

2.5 Quantification of the Supply Base

Supply Base

- a. Total Supply Base area: 3,2 million ha
- b. Tenure by type: Private: 2,8 million ha Public: 442400 ha
- c. Forest by type: Temperate: 3,2 million ha
- d. Forest by management type: Plantations: 1.8 million ha; Natural/ Semi natural: 1.4 million ha
- e. Certified forest by scheme (ha): FSC: 384.588 ha PEFC: 256.369 ha

Feedstock

- f. Total volume of feedstock: 0 – 200.000 t (108.075 t)
- g. Volume of primary feedstock: 0 – 200.000 t (79.963 t)
- h. Percentage of primary feedstock:
 - Certified to an SBP-approved Forest Management Scheme: 1,14 % (1.230,96 t)
 - Not certified to an SBP-approved Forest Management Scheme: 98,86 %
- i. List all species in primary feedstock, including scientific name:
 - Maritime pine (*Pinus pinaster*)
 - Umbrella pine (*Pinus pinea*)
 - Eucalyptus (*Eucalyptus spp*)
 - Poplar (*Populus spp*)
 - Acacia (*Acacia spp*)
- j. No feedstock from primary forest.
- k. Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme – 1,14%

Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme – 98,86 %

- l. Volume of secondary feedstock: 28.112 tonnes (27,37%)
- m. No tertiary feedstock

For the following year, we intend to maintain the supply profile from 2017, maintaining or increasing the consumption of primary feedstock and slightly reducing the consumption of secondary feedstock, essentially woodchips, sawdust and slabwood from maritime pine.

With the company's continued efforts to encourage the supply of certified source material (FSC or PEFC), it is expected that there may be volumes registered for these material categories.

It is also intended to maintain a Supply Base Evaluation (SBE) and, after certification of SBP Standard 1: Feedstock Compliance Standard, start and progressively expand the SBP compliant feedstock.

3 Requirement for a Supply Base Evaluation

SBE completed	SBE not completed
x	☐

Virtually all consumed feedstock is not FSC nor PEFC certified, which results in a need for a Supply Base Evaluation to enable the supply of SBP compliant pellets.

4 Supply Base Evaluation

4.1 Scope

Primary feedstock originating from forests located in Portugal, mainly the districts of Setúbal, Beja, Évora, Lisbon, Portalegre, Santarém, Castelo Branco, Faro, Leiria and Coimbra, provided by qualified suppliers under Glowood's **Supplier Qualification and Control Program**.

4.2 Justification

The Supply Base Evaluation is justified by the company's intention to increase pellet production with the "SBP compliant" biomass claim, considering the insufficient supply of FSC and PEFC certified primary feedstock in the domestic market.

4.3 Results of Risk Assessment

While the Regional Risk Assessment (RRA), which is being carried out by the Working Group created under Technical Committee 145 of the Portuguese Quality Institute (IPQ), and coordinated by ANPEB (National Association of Biomass Energy Pellets), is not yet completed and endorsed by SBP, the Regional Risk Assessment produced by NEPCon at the request by ANPEB was considered for this SBE, in accordance with the requirements of the SBP, for primary feedstock originating from the mainland of Portugal, having identified 13 indicators with specified risk:

- 2.1.1 - Forests and other areas with high conservation value in the Supply Base are identified and mapped.
- 2.1.2 - Potential threats to forests and other areas with high conservation values (HCV) from forest management activities are identified and managed. (HCV 1, HVC 3, HCV4 e HCV5)
- 2.1.3 - Feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.
- 2.2.1 - Feedstock is sourced from forests where there is appropriate assessment of impacts, and planning, implementation and monitoring to minimise them.
- 2.2.2 - Feedstock is sourced from forests where management maintains or improves soil quality (CPET S5b).
- 2.2.3 - Key ecosystems and habitats are conserved or set aside in their natural state (CPET S8b).
- 2.2.4 - Biodiversity is protected (CPET S5b).
- 2.2.6 - Negative impacts on ground water, surface water and water downstream from forest management are minimized. (CPET S5b).

- 2.4.1 - The health, vitality and other services provided by forest ecosystems are maintained or improved (CPET S7a).
- 2.4.2 - Natural processes, such as fires, pests and diseases are managed appropriately (CPET S7b).
- 2.5.1 - 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)
- 2.8.1 - Appropriate safeguards are put in place to protect the health and safety of forest workers (CPET S12)
- 2.9.1 - Biomass is not sourced from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks.

4.4 Results of Supplier Verification Programme

NA.

4.5 Conclusion

The main conclusion of the Glowood Supply Based Assessment indicates that the company, through its **Supplier Qualification and Control Program**, is able to ensure the supply of primary feedstock with indicators as low risk, thus suitable for production of pellets with SBP compliant claim.

To date, the Program has produced the following results:

- Training of 11 suppliers
- 8 qualified suppliers
- 13 Monitoring Audits (Primary Feedstock)
- 25 supplies with Information of Origin of the Forest Material, totaling 22.171,2 tons of primary feedstock

The main indicator for which it was not possible to assess the risk as low was 2.1.2 (potential threats to forests and other areas with high conservation values (HCV) from forest management activities are identified and managed. HCV 1, HVC 3, HCV 4 and HCV 5)).

Essentially, these were 5 supplies from protected areas without approval from the authorities, and/or, for operations not planned in the scope of a Forest Management Plan approved by the authority.

There was 1 supply in which the indicator 2.1.3 (Feedstock is not sourced from forests converted to production plantation forest or non-forest lands after January 2008.) was not evaluated as low risk because it was a clear-cut of an area that will be converted into pasture.

In addition, there was 1 supply where indicator 2.8.1 (appropriate safeguards are put in place to protect the health and safety of forest workers.) was also not assessed as low risk due to the conditions of some subcontracted workers, causing the supplier to not yet obtain the qualification.

5 Supply Base Evaluation Process

The Glowood Supply Base Evaluation was carried out by a team defined and coordinated by the Integrated System Manager (GSI), with expertise and experience in topics related to the specified risks and the defined mitigation measures, including ISO 9001 and 14001 certifications, ENplus, FSC, PEFC and SBP.

As mentioned above, the National Risk Assessment by NEPCon at the request of ANPEB was considered, in accordance with the requirements of the SBP, taking into account the reputation that entity has in the fields of SBP and the FSC, specifically on the risk assessments in that such initiatives are required for the production of certified material.

For the 13 indicators with specified risk, mitigating measures and respective means of verification were defined.

The suppliers of primary feedstock for the company were evaluated for their capacity and regularity of supply, initially identifying 14 with the potential for the implementation of the Supplier Qualification and Control Program, with the prospect of obtaining 70% of primary material for the production of pellets with SBP compliant biomass in a first phase.

The identified suppliers were invited to participate in the Program, with 11 suppliers being trained, of which 8 were eventually qualified and formally agreed to participate.

As support, Good Practice Guidelines were prepared and distributed, applicable to suppliers and property owners and managers, as well as forms for collecting and sending information.

Qualified suppliers have their legal status proven, practice and propagate Good Forest Practices, collect and send prior information about the area of origin of the material to be supplied and are subject to **Glowood's** follow-up and control actions.

Based on the information from the area previously provided, the company's managers evaluate the framework and identify any aspects to be verified and confirmed, whether through documentation, site audit, or stakeholder consultation.

6 Stakeholder Consultation

The Supply Base Evaluation, including the Risk Assessment and the Supplier Qualification and Control Program, was subject to a public consultation, launched on October 2, 2017, in order to gather contributions to consolidate or improve the Evaluation.

The consultation was done by e-mail, and more than 60 interested parties were contacted, including Authorities, Municipalities, Town Councils, Representative Entities, Teaching Institutions, Producer Associations, Companies, Service Providers, Clients, Specialists, Fire Department and Unions.

6.1 Response to stakeholder comments

So far only one response has been received, and the respective stakeholder declared to have no competence in risk assessment and qualification and control of suppliers, and therefore could not comment.

7 Overview of Initial Assessment of Risk

The National Risk Assessment made by NEPCon at the request of ANPEB, in accordance with the requirements of the SBP, for primary feedstock originating in the mainland of Portugal, identified 13 indicators with specified risk:

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

Indicator	Initial Risk Rating		
	Specified	Low	Unspecified
1.1.1		X	
1.1.2		X	
1.1.3		X	
1.2.1		X	
1.3.1		X	
1.4.1		X	
1.5.1		X	
1.6.1		X	
2.1.1	X		
2.1.2	X		
2.1.3	X		
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	

Indicator	Initial Risk Rating		
	Specified	Low	Unspecified
2.3.1		X	
2.3.2		X	
2.3.3		X	
2.4.1	X		
2.4.2	X		
2.4.3		X	
2.5.1	X		
2.5.2		X	
2.6.1		X	
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		
2.9.2		X	
2.10.1		X	

8 Supplier Verification Programme

8.1 Description of the Supplier Verification Programme

NA.

8.2 Site visits

NA.

8.3 Conclusions from the Supplier Verification Programme

NA.

9 Mitigation Measures

9.1 Mitigation measures

Indicator	Mitigating measures	Means of Verification
2.1.1 2.1.2 2.2.3 2.2.4	• Approval and qualification of the suppliers • Promoting good practices • Disallow feedstock from areas where there are proven threats to biodiversity. • Monitoring	• Checklist completed by supplier/property owner • Consultation of the information, cartography and conditions established for the areas • Inspection
2.1.3	• Disallow feedstock from natural forests planted with eucalyptus after 2008, or to be planted with eucalyptus, or converted to pasture, agriculture or other use. • Monitoring	• Checklist completed by supplier/property owner
2.2.2	• Disallow feedstock from areas susceptible to desertification with proven soil damages, and areas above the minimum size required to have a PGF as established in the respective PROF. • Monitoring	• Consultation of the cartography of ICNF and the respective PROF • Inspection
2.2.1 2.2.6	• Disallow feedstock from clear-cut areas above the maximum limit. • Qualification of the suppliers • Promoting good practices • Monitoring	• Checklist completed by supplier/property owner • Consultation of the respective PROF • Inspection
2.4.1 2.4.2	• Approval and qualification of the suppliers • Promoting good practices • Disallow feedstock from areas with proven threats to the health and vitality of the forest • Monitoring	• Checklist completed by supplier/property owner • Inspection
2.5.1	• Disallow feedstock from areas with abusive use of the fences. • Monitoring	• Checklist completed by supplier/property owner • Inspection
2.8.1	• Approval and qualification of the suppliers • Promoting good practices • Disallow feedstock where failure to comply with health, safety and workers' rights have been proven • Monitoring	• Checklist completed by supplier/property owner • Documentation from the supplier/property owner (Insurance, Aptitude forms, Declarations from Social Security, Training records, Records of PPE distribution, etc.) • Inspection
2.9.1	• Approval and qualification of the suppliers • Promoting good practices • Disallow feedstock from riparian areas and harvest or conversion of mature oak after 2008. • Monitoring	• Checklist completed by supplier/property owner • Cutting license • Inspection

9.2 Monitoring and outcomes

To date, 13 Monitoring Audits (Primary Feedstock) have been carried out, resulting in:

- 25 supplies with Information of Origin of Forest Material, totaling 22.171,2 tons of primary feedstock;
- 2.532,04 tons of primary feedstock with at least one indicator with specific risk.
- 19.639,16 tons of primary feedstock with all indicators with low risk.

The main indicator for which it was not possible to assess the risk as low was 2.1.2 (potential threats to forests and other areas with high conservation values (HCV) from forest management activities are identified and managed.HCV 1, HVC 3, HCV 4 and HCV 5)).

Essentially, these were 5 supplies from protected areas without approval from the authorities, and/or, for operations not planned in the scope of a Forest Management Plan approved by the authority.

In addition, there was one supply where indicator 2.8.1 (appropriate safeguards are put in place to protect the health and safety of forest workers.) was also not assessed as low risk due to the conditions of some subcontracted workers, causing the supplier to not yet obtain the qualification. For the other indicators, it was possible to evaluate the risk as low, determined by:

- Information previously collected from the areas,
- Verification of areas during and/or after operations,
- The organizational level of the suppliers,
- The good condition of the machinery and equipment, and
- Training of workers and observation of good forestry practices during the execution of operations.

10 Detailed Findings for Indicators

Detailed Findings for Indicators are presented in the document "National SBP Risks Assessment for Portugal" prepared by NEPCon at the request of ANPEB, in accordance with the requirements of the SBP.

Detailed findings for each Indicator are given in the document "SBP National Risk Assessment for Portugal" elaborated by NEPCON in compliance with SBP framework.

See Annex 1.

11 Review of Report

11.1 Peer Review

This report was sent to an independent reviewer. The review period was 10 days. The comments received were duly considered in the final edition of the report.

The reviewer is a Registered Professional Forester with university degrees in forestry from both Sweden and Canada. Since 1982, he has worked for various forest based companies and organisations in Sweden, Canada, Switzerland and Portugal where he currently resides.

At this time, he works in Portugal, Sweden, Norway, Denmark, USA and Canada as a natural resource consultant in management, representation and certification as well as an auditor for SBP, FSC, PEFC, ISO 9001, ISO 14001, ISO 19011, OHSAS 18001 and GAP analyses.

11.2 Public or additional reviews

The Supply Base Evaluation, including the Risk Assessment and the Supplier Qualification and Control Program, was subject to a public consultation, launched on October 2, 2017, in order to gather contributions to consolidate or improve the Evaluation.

The consultation was done by e-mail, and more than 60 interested parties were contacted, including Authorities, Municipalities, Town Councils, Representative Entities, Teaching Institutions, Producer Associations, Companies, Service Providers, Clients, Specialists, Fire Department and Unions.

12 Approval of Report

Approval of Supply Base Report by senior management			
Report Prepared by:	Natércia Carvalho Giovanni de Alencastro	Gestor do Sistema Integrado Consultor	05/01/2018
	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 Baetas	Diretor Geral	05/01/2018
	Name	Title	Date

13 Updates

13.1 Significant changes in the Supply Base

The main changes in the Supply Base for 2017 relate to the following:

- Significant decrease in the consumption of primary feedstock, mainly round wood.
- Increased consumption of Residual Forest Biomass
- Increase in the consumption of secondary feedstock, essentially chips, sawdust and slabwood of maritime pine.
- Implementation of the Supply Base Evaluation to enable the consumption of SBP compliant feedstock originating from areas in which all the SBP indicators are evaluated as low risk.
- Entry of FSC and PEFC certified material

The combination of these changes translates into a significant improvement in the supply profile in view of the sustainability of forestry production and, consequently, the production of pellets for energy purposes.

13.2 Effectiveness of previous mitigation measures

NA.

13.3 New risk ratings and mitigation measures

NA.

13.4 Actual figures for feedstock over the previous 12 months

The supply of last year (January to December 2017) is characterized as:

Material	Species	Quantity (t)
Roundwood	Maritime pine	16.153
	Umbrella pine	16.081
	Eucalyptus	4.068
	Other	2.067
Biomass (Forest residues)	Maritime and Umbrella Pine	40.119
	Eucalyptus	482
	Other	886
Wood Industry Residues (Chips, Sawdust, Slabwood)	Maritime and Umbrella Pine	28.219

		108.075
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13.5 Projected figures for feedstock over the next 12 months

The forecast supply for 2018 is characterized as:

Material	Species	Quantity (t)	%	
			SBP controlled	SBP compliant
Roundwood	Maritime and Umbrella Pine	93.089	15	45
	Otherspecies	15.515	5	5
Biomass (Forest residues)	Maritime and Umbrella Pine	23.272	5	10
Wood Industry Residues (Chips, Sawdust, Slabwood)	Maritime and Umbrella Pine	23.272	15	-
		155.148	100	

Annex 1: Detailed Findings for Supply Base Evaluation Indicators

	Indicator
1.1.1	The Biomass Producer's Supply Base is defined and mapped.
Finding	This SBP Regional Risk Assessment covers feedstock coming from material with origin in Mainland Portugal. In Mainland Portugal, private property from private owners (89%) and communitarian (Baldios, 8%) correspond to 3,060 million hectares of forests (97% of total forest land), including 5.7% property of industry enterprises. Public areas are up to 3% (around 94,000 has). Also average size of forests lands is 5.9 has with significant differences among regions. In the North and Central Mainland Portugal prevails lands with surface bellow 1 ha. In the South (with the exception of Algarve) prevails lands bigger than 10 has. 61% of forest owners has properties under 5 has representing 26% of total forest surface. Regarding species, most relevant in terms of pellets production are Pinus pinaster (Maritime pine/Pinheiro bravo) 23% of forest surface 714,000 has, Pinus pinea (Stone pine/Pinheiro manso) 6% of forest surface 175,000 has, and Eucalyptus spp. (Eucalyptus/Eucalipto) 26% of forest surface 812,000 has. These 3 species are distributed all around country, especially Pinus pinaster and Eucalyptus spp. Pinus pinea is clearly more abundant in the South. All other species present in Mainland Portugal: Quercus suber (Cork oak/Sobreiro), Quercus ilex (Holm oak/Azinheira), Quercus spp. (Oaks/Carvalhos), Castanea sativa (Chestnut/Castanheiro), Fraxinus spp. (Ash/Freixo), Alnus glutinosa (Alder/Amieiro),... are also used on drying process. So primary wood based input material comes mainly from private properties from several species. In regards to mapping on the forest level, the main planning document, which serves as a description of the supply base is the Forest management plan. Instructions on forest management planning define the requirements for data and map description to be included into the management plan. In 2013 over 44% of forest surface was covered by management plan, but the obligation is only for properties above a specified size defined regionally. However, since there have been several rounds of subsidies, many estates that would not otherwise have forest maps, now have them. Data about the proportion of forest without any cartography was not found available. For areas where forest maps are not available, it will be the obligation of the BP to ensure that maps of sufficient scale and quality are available.

	On the above background and limitations in scope, it is concluded that there is low risk in relation to the definition and mapping of the supply base.
Means of Verification	• The Scope is defined and justified; • Maps to the appropriate scale are available; • Key personnel demonstrate an understanding of the supply base.
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Inventario Florestal Nacional IFN5 (FlorestaStat_IFN5); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn5/rel-fin) Inventario Florestal Nacional IFN6, preliminary results (IFN6 - Resultados preliminares.pdf); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn6) Estatísticas Agrícolas 2015.xls, Instituto Nacional Estatística (https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_bo ui=271434407&PUBLICACOESmodo=2) Decreto lei 16-2009 planos gestão florestal (https://dre.pt/application/dir/pdf1sdip/2009/01/00900/0026800273.pdf); ICNF portal (http://www.icnf.pt/portal/icnf/legisl/legislacao/2009/decreto-lei-n.o-16-2009-de-14-de-janeiro.-d.r.-n.o-9-serie-i) Normas Técnicas Planos Gestão Florestal (http://www.icnf.pt/portal/florestas/gf/pgf/resource/doc/manual/normas-tecn-PGF-AFN.pdf)
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
1.1.2	Feedstock can be traced back to the defined Supply Base.
Finding	Information obtained from Centro Pinus (non-profit association for key players of Pine Row), INE and others shows that pine wood consumption of timber industry in 2014 was 4,360,000 m³ (1,300,000 m³ sawn mill industry, 30%; 300,000 m³ biomass, 7% and 1,400,000 m³ pellets, 32% and 1.360.000 other uses not relevant for pellets industry). However, in 2014 there was available only 2,247,000 m³ of pine wood from Mainland Portugal (<i>Pinus pinaster</i>). As an obvious conclusion, a lot of imported pine comes into Portuguese timber industry in 2014, mostly from Spain. Similar situation is in Eucalyptus for pulp and paper industry, where low quality parts may be also used in biomass industry. Information from Annual Bulletin of CELPA (Paper Industry Association) states that in 2014, there was imported 45% of total eucalyptus wood procured by paper industry (2,415,000 m³ imported), in its vast majority round wood from Spain and minority chips from South America or Africa (usually FSC/PEFC certified or controlled).

Based on the fact that relevant volumes of imported material come into Portugal annually, it is noted that imported material it is not covered by this RRA.

Regarding Mainland Portugal, no permit is required for normal silvicultural harvesting, including the final cut. In fact, a legal demanding is designed for cuttings for properties with areas below the size of obligatory Forest Management Plan, but it was not defined the details and so it is not in place (article 7th of Law n.º 33/96, at 17/08).

A felling manifest is obligatory for all normal commercial harvesting activities, and may be submitted to forest authorities (ICNF) up to 30 days after the felling operation. However, this manifest is used only for national statistical purposes, and not for trading or transporting forest products.

A National Action Plan for Control of Pinus Wilt Disease/Nemátodo-da-madeira-do-pinheiro (NMP) (*Bursaphelenchus xylophilus*) and its vector insect *Monochamus galloprovincialis* is in place and there is obligation of previous communication of any felling and/or transportation of wood affected by pest. This documentation (phytosanitary manifest) also must accompany material until the arrival to industrial processing facilities. This mostly focuses on *Pinus pinaster* (23% of all forest areas) main source for BP.

On the other hand, approval documentation is required relating to specific operations on cork and holm Oak including cuttings and prunings, Holly cuttings, and also premature cuttings of Eucalyptus, *Pinus pinaster* or riparian cuttings.

Since 2013 and the introduction of the EUTR laws, operators are required to register their activities on a Digital Platform managed by forest authorities (ICNF). Inspections from government are in place and operators must apply DDS to justify legality of timber.

Regarding transportation, legal requirements including having the correct and valid invoice or transport documentation are in place:

- Regular invoice for trading operation or transport documentation or waybill, or devolution note
- CRM on international transportation
- In case of pine or conifers timber the transporter must have an Economic Operator Registry and a phytosanitary Manifest for each felling (if one feelings is transported several times it is mandatory to copy the manifest for all the transportations)

The issuance of required transport and sales documents is well understood and regulations are largely adhered to. Inspections are common at Portuguese roads and enforcement of regulations is seen to be good.

	Felling phytosanitary manifest includes identification of the origin of the felling. Also documentation for transportation identifies the origin of the transport which could be useful in case of direct transport to BP facilities and, in any case, is useful in the traceability of material. Both ways are the most common to trace back to origin even if the origin area is not the forest land itself but the <i>freguesia</i> (minimum administrative division) where forest land is included. There system in place to trace the feedstock primary origin back to the forest stand, but it is possible to do so if there are elements in the manifests or transportation documents, which could be used in the cadastral system (as the article number and section) or geographic coordinates in areas without cadastral system. As evidenced by the low Corruption Perception Index of Portugal (63) and the high level of law enforcement documents such as invoices and transport documents can be seen as reliable sources of information. On the above background, the risk related to the traceability of feedstock back to the supply base is evaluated to be Low as there are enough tools available to know if a Feedstock comes from Mainland Portugal.
Means of Verification	• Copy of phytosanitary manifests (felling and/or transportation) for all conifers with geographic elements (cadastral and/or coordinates); • Copy of delivered felling manifest to Forest Authorities (ICNF) for all commercial harvestings with geographic elements (cadastral and/or coordinates). • Invoices, waybills, transport/shipping documents • The existence of a strong legal framework in the region • Feedstock inputs, including species and volumes, are consistent with the defined Supply Base; • Transport documentation and goods-in records are consistent with the defined scope of the SBE.
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Estatísticas Agrícolas 2015.xls, Instituto Nacional Estatística (https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_bo ui=271434407&PUBLICACOESmodo=2) Boletim-Estatístico-da-Celpe-de-2014 (http://www.celpe.pt/wp-content/uploads/2016/09/Boletim_WEB_2015.pdf) Relatório-de-Characterização-da-Fileira-Florestal-2014 (http://www.aiff.org.pt/assets/Relatorio-de-Characterizacao-da-Fileira-Florestal-2014-160p-CAPA-3-spread....pdf) Cutting Permission in Law n.º 33/96, at 17/08 (article 7th) https://dre.pt/application/dir/pdf1sdip/1996/08/190A00/25682573.pdf

	Fileira do Pinho: desafios e oportunidades (centroPINUS_JoaoGonçalves dados fileira pinho 2014.pdf); Centro Pinus (http://www.centropinus.org/index.php?lingua=1) Decreto lei 123-2015 nematodo do Pinheiro (https://dre.pt/application/file/67649256); ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/ag-bn/nmp) Declaração Retificação n.º 38/2015 de 01/09 do Decreto lei 123-2015 nematodo do Pinheiro (https://dre.pt/application/file/70144398) Decreto lei 174-1988 manifesto corte (https://dre.pt/application/file/374768); ICNF portal(http://www.icnf.pt/portal/icnf/serv/formularios/manif/man-cort-arr-arvor) Decreto lei 169-2001 Sobreiras e azinheiras (Decreto lei 169-2001 Sobreiras e azinheiras.pdf); ICNF portal (http://www.icnf.pt/portal/icnf/serv/formularios/sobr-azinh) Registo de Operador de Madeira e Derivados ICNF portal (http://www.icnf.pt/portal/florestas/fileiras/reg-op) Decreto Lei 198/2012 de 24/08 FATURAS E OUTROS DOCUMENTOS COM RELEVÂNCIA FISCAL (http://info.portaldasfinancas.gov.pt/NR/rdonlyres/907FD2F4-9A9C-485D-8A99-FD164BF9FCEC/0/Decreto-Lei%20n%20 198 2012 24 08.pdf) Transparency international, corruption perception index Portugal (https://www.transparency.org/country/#PRT)
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
1.1.3	The feedstock input profile is described and categorised by the mix of inputs.
Finding	As described in previous indicators Primary Feedstock comes mainly from private properties and several species: mainly Pines and Eucalyptus for pellets production and other species for drying. Sawmills and other timber industry entities producing feedstock during timber processing, are sources of Secondary Feedstock. The main products provided from sawmill and other timber industry entities are shavings, sawdust and chips. There is no specific legislation regulating classification of wood/timber harvested in Portugal in terms of species, quantities or qualities. The fact is that most of forests are productive and Eucalyptus, Pines and Cork Oak covers 78% of forest land and this causes not perceiving this issue as a problem with national wood/timber. Industrial use of Eucalyptus and Pines ensures that they are adequately classified and measured. Felling manifests require identification of species and volumes and are obligatory for every forest species for industrial use. Since the supply chains are usually not reliable enough, information regarding the feedstock can be gathered in collaboration with the forest owners when necessary. Thus accurate classification and description of type, species, and categorization into roundwood and residual

	wood material, and when required, the approximate proportion of roundwood from final felling, in accordance with SBP requirements is possible for Biomass Producers. Based on the available information, the risk for this indicator has been assessed as Low.
Means of Verification	• Copy of delivered felling manifest to Forest Authorities (ICNF) for all species used in industrial purposes • Invoices • Transport/shipping documents • Waybills • Feedstock input records
Evidence Reviewed	Estrategia Nacional das Florestas (https://dre.pt/application/file/66432612); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Inventario Florestal Nacional IFN6, preliminary results (IFN6 - Resultados preliminares.pdf); ICNF portal Decreto lei 174-1988 manifesto corte (https://dre.pt/application/file/374768); ICNF portal(http://www.icnf.pt/portal/icnf/serv/formularios/manif/man-cort-arr-arvor) Decreto Lei 198/2012 de 24/08 FATURAS E OUTROS DOCUMENTOS COM RELEVÂNCIA FISCAL (http://info.portaldasfinancas.gov.pt/NR/ronlyres/907FD2F4-9A9C-485D-8A99-FD164BF9FCEC/0/Decreto-Lei%20n%20 198 2012 24 08.pdf)
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	In Portugal, around 97% of forest land is private (including land owned by individuals, communities and corporations). The remaining 3% are public (State) forests being one of the smallest public forest estates of any country in the world. This proportion means that the most part of the protected and classified areas are also private lands. Forest land tenure is based on one document (Description of the Land Registry) but several documents are used on the ground level as transitory or incomplete evidence, as the Description on the Land Registry is not updated for all lands. There are, however, regions (53% of territory) where there is a geometric cadastral survey of rural lands (Cadastró Geométrico da Propriedade Rústica) and so there is consistency between spatial and numeric information held by tax offices (matriz e secção da Caderneta Predial Rústica da repartição das finanças). In regions where there is no rural geometric cadastre (47% of the territory), the land tenure documents are based only on descriptions of boundaries and communications with neighbors. In the field, property borders are denoted with stone markers for only 75% of the registered land (this figure does not include the unknown proportion of marked land for which the owner is not known).

	The rural cadastral process is very complex and there are still areas where the land tenure situation lacks transparency. Big differences exist therefore between regions with or without the rural geometric cadastral survey, and also with or without marked borders. A modern estate cadastre has been initiated – based on geo-referenced data – with the multiple objectives of conformity to the land description, legal tenure and tax payments. This has to date been completed for 3% of the territory. Cadastral works are difficult and complex and even the modern process of cadastral works readily become chaotic. Challenges associated with cadastral works include the cost as well as the long timeframe. At the base there is a fiscal problem, as it is currently not possible for government to collect the land taxes of rural lands not covered by cadastre (IMI). While the scale of this issue is broad, the impact has been evaluated as limited. Despite the difficulties and complexities concerning land tenure and management rights (mainly due to the absence of geometric cadastre information), there is no significant evidence, at the national level, of conflicts or disputes about the issue. Besides land tenure, forest land use rights can be included in a Forest Renting/leasing contract (Contrato de Arrendamento Florestal), which must be communicated to tax authorities and these will send it to forest authorities. Based on the available information, it is considered that demonstration of legality of ownership and land use is a low risk requirement in Portugal.
Means of Verification	• Description on the Land Registry (Descrição na Conservatória do Registo Predial) is the only official land tenure document. • Content certificate matrix article of tax office (Certidão de teor do artigo de Matriz da repartição de finanças) & land notebook (Caderneta predial) is the fiscal document which confirms taxes payment. • Judicial final and unappealable decision (Sentença judicial transitada em julgado). • Notarial deed (Escritura notarial). • Testament (Testamento) • Forest Renting/leasing contract (Contrato de Arrendamento Florestal) • For Collective or Comercial entities the extract from the commercial register (Certidão do Registo Comercial) to prove the specific responsibilities of owners/managers/presidents.
Evidence Reviewed	Government sources: • Constitution (<i>Constituição da República Portuguesa</i>) http://www.parlamento.pt/Legislacao/Documents/constpt2005.pdf • Cadastre at Direção Geral do Território: http://www.dgterritorio.pt/cadastro/cadastro_geometrico_da_propriedade_rustica_cgpr/_con_sultar_seccoes_cadastrais/ Non-Government sources • Transparency International's Corruption Perception Index 2014 at Transparency International -The global coalition against corruption –

	https://www.transparency.org/cpi2015/results •Worldwide Governance Indicators Report at World bank: http://info.worldbank.org/governance/wgi/index.aspx#reports •"O cadastro e a propriedade rustica em Portugal";Fundação Francisco Manuel dos Santos e Rodrigo Sarmento de Beires, May/2013 (https://www.ffms.pt/upload/docs/o-cadastro-e-a-propriedade-rustica-em-portugal_ypUM5ASBAUmUpHUIgJtp0A.pdf) • "Cadastro a prédios rústicos e urbanos em Portugal custaria 700 ME"; Lusa-Última hora 27/03/2014 in Revista Visão: (http://visao.sapo.pt/lusa/cadastro-a-predios-rusticos-e-urbanos-em-portugal-custaria-700-me=f774740)
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	Forest biomass feedstock definition on Portuguese legislation is included on legal framework created both for dedicated energetic generation plants and for residues purposes. In the first case definition forest biomass, consists of the biodegradable fraction products, waste and residues from biologic origin from the forest or other plantations. In this decree (Dec-Law 5/2011 of 10/01) it is stated that a joint legal ordinance from Agriculture and Energy Ministries should define what kind of feedstock could be used for forest biomass, but it wasn't found until the end of this report. For the residues purposes forest biomass is the vegetable matter from forestry and forestry waste, only including the material resulting from the improvement operations, including thinning and pruning, fuel management and harvesting of forest stands, as the branches, tree-tops, stumps, leaves, roots and bark. No permit is required for logging activities, including normal commercial silvicultural harvesting, the final cut and other. In fact a legal demanding is designed for cuttings for properties with areas below the size of obligatory Forest Management Plan, but it was not defined the details and so it is not in place (article 7th of Law n.º 33/96, at 17/08). Only an harvesting written notice (manifesto) is obligatory (for timber and cork), and may be submitted to forest authorities (ICNF) up to 30 days after the felling/extraction operation. Approval documentation is required relating to specific operations over cork (<i>Quercus suber</i>) and Holm oak (<i>Quercus rotundifolia</i>) including cuttings and prunings, Holly (<i>Ilex aquifolium</i>)

cuttings, and also premature cuttings of Eucalyptus and Pinus pinaster or riparian area cuttings.

In all areas it is obligatory to have an approved Environment Impact Assessment if forestation or reforestation is taking place with fast-growing plantations species covering over 350 ha or cutting and conversion to non-forest uses in an area greater than 50 ha.

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 mostly focuses on Pinus pinaster (23% of all forest areas) but applies to all other host conifers: Abies spp., Cedrus spp., Larix spp., Picea spp., Pinus spp, Pseudotsuga spp., Tsuga spp. – with these species covering 8% of forests.

Since the onset of the EUTR in 2013 enterprises classified as ‘Operators’ under the regulation have been required to register their activities on a Digital Platform managed by the Forest Authorities (ICNF) <http://www.icnf.pt/portal/florestas/fileiras/reg-op#reg>.

By April 2016 a total of 2762 Operators were registered in the country - of which only 34% had forest activities (forest producers, loggers & forest service providers, sawmills and timber traders).

In addition to the register, Operators must have due diligence system in place for each wood/timber acquisition, which includes procedures for access to information, risk assessment and risk mitigation.

Traders must maintain relevant information about suppliers and buyers of products as well as volumes traded. This information must be kept and be provided to competent authorities upon request.

The Competent Authority in Portugal for ensuring implementation of the EUTR is Institute for Nature Conservation and Forests (ICNF). The enforcement authority is the National Republican Guard (GNR) which conducts enforcement according to ICNF procedures.

Since the start of 2015 a far-reaching regime of inspections has begun. 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.

As there is no permit required for ordinary forest harvesting, all attention is focused on referred exceptional cases:

- Cork Oak, Holm Oak and Holly operations and also riparian vegetation and protected areas
- Conversion from forest to plantations for areas larger than 350 ha or other uses for areas greater than 50 ha,;
- The National Action Plan for Control of NMP applies to all conifers and includes a strict phytosanitary plan which requires up-front registration of all operators and notification to

	authorities, prior to commencement of harvesting, transport and processing of wood (some of cuttings detailed on Action Plan are obligatory). -In the case of premature cutting licenses no evidence was found in the ground of any implementation of this law. According to the available information it is considered low risk the requirement of this indicator.
Means of Verification	Written permit referring applicable legislation in all exceptional cases referred above; Operator registry and previous notification in cases of all conifers because of Nematode Pine Plan NMP; EUTR Operator Registry: 1) Information about the wood/timber products which shall include quality, quantity, the supplier, origin country, and conformity with national legislation; 2) Risk evaluation- of the illegality of the timber by operator of the supply chain, based on the collected information. 3) Risk minimization - by additional information, verifications if the evaluation reveals specified risks.
Evidence Reviewed	Cutting Permission in Law n.º 33/96, at 17/08 (article 7th) https://dre.pt/application/dir/pdf1sdip/1996/08/190A00/25682573.pdf Cork oak and Holm oak (<i>Quercus suber</i> and <i>Quercus rotundifolia</i>): • DL155/2004, de 30/06 • DL 169/2001, de 25/05 <i>Ilex aquifolium</i>: • DL 423/89, de 4/12 Pinus Nematode: • Dec.Retificação n.º 38/2015 de 01/09 • DL 123/15, at 3/07 • DL 95/2011, de 8/08 • DL 154/05 6/09 • Dec. n. 30-A/2011, de 7/10 Cuttings before mature of <i>Pinus pinaster</i> and <i>Eucaliptus</i>: • DL173/88,17/05 Harvesting manifest: • DL 174/88, 17/05 Municipal licenses of vegetation destruction: • DL 139/89 High risk areas for harvesting: • Desp. 17 282/2003 Operational cuttings on forest regime areas: • Desp. 18355/2008 Riparian vegetation destruction:

	• Law 54/2005 15/11 . Environment law nº 19/14 de 14/04 • DL 151-B/2013 de 31/10 https://dre.pt/application/file/513900 • DL 49/05, de 24/02 • DL 197/2005, de 8/11 Timber Operator Registry: • DL76/2013 at 5/06 • EUTR: DL nº76/2013 de 5/06 artºs 3º, 8º at https://dre.pt/application/dir/pdf1sdip/2013/06/10800/0322203225.pdf • (UE)Regulation n.º 995/2010 artºs 4º, 5º, 6º http://www.icnf.pt/portal/florestas/fileiras/resource/docs/reg/regulamento-995-2010 Waste and residues laws: http://www.pgdlisboa.pt/leis/lei_mostra_articulado.php?nid=981&tabela=lei_velhas&nversao=4&so_miolo= Energetic purposes forest biomass definition: https://dre.pt/application/conteudo/70064732 https://dre.pt/application/dir/pdf1sdip/2011/01/00600/0017300175.pdf Government sources • APA-Agência Portuguesa de Ambiente at http://apambiente.pt/index.php; • Municipalities at (<a href="http://www.cm-<NAME>.pt/">http://www.cm-<NAME>.pt/); • SEPNA-Serviço da Protecção da Natureza e do Ambiente/GNR- Guarda Nacional Republicana at (http://www.gnr.pt/default.asp?do=5r20n/DF.zv55n1/Zv55n1) • Instituto da Conservação da Natureza e Florestas at page http://www.icnf.pt/portal/florestas/fileiras/reg-op; • ICNF Report: (http://www.icnf.pt/portal/florestas/fileiras/resource/docs/icnf-ruem) Non-Government sources ANEFA - Associação Nacional de Empresas Florestais, Agrícolas e do Ambiente at: http://www.anefa.pt AIMMP – Associação das Indústrias de Madeira e Mobiliário de Portugal at: http://aimmp.pt/
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	

	In Portugal it is not applicable payments for harvest rights and timber, including duties, relevant royalties and taxes related to timber harvesting such as stumpage fees and other volume based fees. Only taxes related to timber harvesting are applicable to all economic activities such as value added taxes (VAT) and income taxes (IRS and IRC). VAT (IVA) taxes: A normal tax rate of 23% VAT is applied to sale of wood. In special cases, a VAT reduction to 6% can be applied to the owner of 'standing wood' or 'standing stock sales'; or even VAT exemption if the owner is an agriculturalist or silviculturalist. Invoices must be issued by the seller, but self-invoicing by the buyer may occur in exceptional circumstances if some conditions are met (previous agreement, data conformity, etc). As no specific evidence of irregularity has been identified in relation to payment of VAT, this requirement is considered as Low risk. The payment of VAT is a simple requisition that is easy to verify and legally undertake by both entities (seller and buyer). The exceptional regimes of reduced taxes or exemption are in place to include the cases of forest owners with special profiles as agriculturalist or silviculturalist. Income taxes (IRS & IRC): Income taxes are applied according to individual or collective fiscal laws. It was not found any specific evidence of irregularities about income taxes related to harvest companies. Fiscal Authorities are Autoridade Tributária, which makes common inspections on roads together with GNR- Guarda Nacional Republicana. According to the available information, this indicator is classified as low risk.
Means of Verification	- Valid invoice/receipts - Valid declaration of taxes non-debt - IES_ Annual Declaration - Proof of Annual declaration IRS/IRC - Taxes Single Report
Evidence Reviewed	VAT Code CIVA: - DL n.º 102/2008, de 20/6: artº2º 1-a);artº9º 32)List I nº4. Anexo A- IV Individual Income Code to Singular Persons: - DL nº 442-A/88 artº4º nº3,nº4 Updated by Law nº67/2015, de 06/07 Preâ. nº9, artº3 nº1a);nº4; artº4º nº1, nº3 nº4 artº34º Comercial Income Code to collective entities - DLnº 442-B/88 Updated by Law n.º 2/2014 de 16/12, Law nº3/2014 de 16/12 & Law nº4/2014 de 16/12 artº1º, artº2º, artº 3º, artº18º-nº7 ; artº20º nº1 g) artº23º nº2 k) - Port. nº 55/2010 21/01 artº2º Government sources

	- Autoridade Tributária e Aduaneira at: https://www.portaldasfinancas.gov.pt/pt/home.action - Autoridade Tributária e Aduaneira: VAT Exemption and reduction at: http://info.portaldasfinancas.gov.pt/NR/rdonlyres/9A86386D-7EB8-447F-9EAC-CEB67C206BD2/0/INFORMA%C3%87%C3%83O.3526.pdf - Autoridade Tributária e Aduaneira: Self invoicing by the buyer: http://info.portaldasfinancas.gov.pt/NR/rdonlyres/A4FB3349-0071-47FC-97EC-ADE2061C094A/0/Informacao_5332.pdf Non-Government sources - ANEFA - Associação Nacional de Empresas Florestais, Agrícolas e do Ambiente at: http://www.anefa.pt/ - AIMMP – Associação das Indústrias de Madeira e Mobiliário de Portugal at: http://aimmp.pt/ - AIFF – Associação para a Competitividade da Indústria da Fileira Florestal at: http://www.aiff.org.pt/ - OCC-Ordem dos Contabilistas Certificados at http://www.otoc.pt/pt/a-ordem/
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	There are no trees in Portugal belonging to CITES annexes. No direct effect of harvesting or forest management over CITES listed species has been identified.
Means of Verification	List of purchased species
Evidence Reviewed	Portuguese legislation: - DL211/2009, 03/09, artº2º, artº4ºartº9º, artº13º - Port nº1225/2009 de 12/10 ; Portaria nº 1226/2009 de 12/10 - Port nº 7/2010 de 05/01 •Port. 60/2012 de 19/03 EU legislation: - Council Regulation (EC) No 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein, article 4, 5, 7, 8 (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1997R0338:20080411:EN:PDF) - Date of CITES application on EU: JOUE L 189, de 2015-07-17 - European Union page at: http://ec.europa.eu/environment/cites/pdf/trade_regulations/KH7707262PTC.pdf CITES - ICNF page: http://www.icnf.pt/portal/icnf/serv/formularios/cites

	CITES Reports: https://cites.org/sites/default/files/reports/13-14Portugal.pdf
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	Portugal and Portuguese forest sector is not associated with violent armed conflict, including that which threatens national or regional security and/or linked to military control. The country is not covered by a UN security ban on exporting timber or any other international ban on timber export, also there are not individuals or entities involved in the forest sector that are facing UN sanctions. Portugal is well positioned at all international reports: - Corruption Perception Index scores 63 meaning low perceived level of corruption; - Worldwide Governance Indicators (WGI) from 73.3 to 84.13 (1-100points) The WGI report six aggregate governance indicators for over 200 countries and territories over the period 1996-2014, covering i) Voice and Accountability, ii) Political Stability and Absence of Violence/Terrorism, iii) Government Effectiveness, iv) Regulatory Quality, v) Rule of Law, and vi) Control of Corruption. On the other side Portugal (including human rights, illegal logging , forest and timber) is not listed in alarming reports or indexes such as: - Committee to Protect Journalists Impunity Index; - Human Rights Watch; - Global Witness - Chattham House - Amnesty International There are no indigenous or traditional people in Portugal who could claim traditional rights to lands, forests and other resources, based on long established custom or traditional occupation and use. Instead, there are rights to pass in public roads and ways, across the coast or rivers. In Portugal getting in forest lands is not considered as an invasion even on private properties, and there is common use of wild products by communities (mushrooms, asparagus, snails, besides fishing on public waters). However, some conditions may occur about game concessions or cattle farms. Labour rights are respected including rights as specified in ILO Fundamental Principles and Rights at work. Portugal has ratified all 8 Fundamental ILO Conventions.

	According to the available information, this indicator is classified as low risk.
Means of Verification	• Identity card of workers. • Valid written contract. • Valid visa and residence working permit for foreigners out of EU, Iceland, Liechtenstein, Norway, Turkey, Brasil (with equality rights status), Cabo Verde, Guiné Bissau, São Tomé e Príncipe. • Obligatory insurance document. • Updated document of social security payment • IRS /IRC taxes - Relatório Único.
Evidence Reviewed	•Transparency International http://www.transparency.org/cpi2015#map-container •UN Sanctions List at:https://www.un.org/sc/suborg/en/sanctions/un-sc-consolidated-list •World Bank: Worldwide Governance Indicators http://info.worldbank.org/governance/wgi/index.aspx#countryReports •Committee to Protect Journalists https://www.cpj.org/reports/2014/04/impunity-index-getting-away-with-murder.php •Human Rights Watch: http://www.hrw.org/world-report/2015 •Global Witness: www.globalwitness.org Chattam House Illegal Logging Indicators Country Report Card http://www.illegal-logging.info •Amnesty International:https://www.amnesty.org/en/documents/pol10/0001/2015/en/ Labour Code: •Law n.º 7/09 12/02 cap I and updates like Lei 69/13, de 30/08 includes obligatory professional training (http://www.act.gov.pt/(pt-PT)/Legislacao/Codigodotrabalhoatualizado/Paginas/default.aspx) •Republic Assembly Resolution nº109/2012 de 08/08 art 6º (Convention 184 doesn't apply to industrial forest work) •ILO Convention numbers 87, 98, 29, 105, 100, 101,129 e 138, 184 (http://dre.pt/util/getpdf.asp?s=diad&serie=1&iddr=2012.153&iddip=20121525) •Foreign workers: Law n.º 23/2007 at 04/07 artº59º 5a) and updates (http://www.pgdlisboa.pt/leis/lei_mostra_articulado.php?nid=920&tabela=leis&so_miolo) •Labour Conditions Authority-ACT http://www.act.gov.pt/(pt-PT)/Paginas/default.aspx. •Ministry of Solidarity, Employment and Social Security http://www.portugal.gov.pt/pt/ministerios/mtsss.aspx •Employment and Professional Training Institute at https://www.iefp.pt/ •Ministry of Internal Administration http://www.portugal.gov.pt/pt/ministerios/mai/equipa.aspx Immigration And Borders Services http://www.sef.pt/portal/V10/EN/asp/page.aspx •SETAA-Sindicato da Agricultura, Alimentação e Florestas: at http://www.setaa.pt/ •UGT-União Geral de Trabalhadores at https://www.ugt.pt/ •CGTP - Confederação Geral de Trabalhadores Portugueses at http://www.cgtp.pt/ •ANEFA - Associação Nacional de Empresas Florestais, Agrícolas e do Ambiente at: http://www.anefa.pt/ •UNAC - União da Floresta Mediterrânica http://www.unac.pt/

	•Forum Florestal- Estrutura Federativa da Floresta Portuguesa at http://forumflorestal.pt/ •Forestis- Associação Florestal de Portugal http://www.forestis.pt/ •FNAPF- Federação Nacional das Associações de Proprietários Florestais http://www.fnapf.pt/ •Confagri-Confederação Nacional das Cooperativas Agrícolas e do Crédito Agrícola de Portugal, CCRL at http://www.confagri.pt/ •CNA - Confederação Nacional de Agricultura at http://www.cna.pt/ •CAP- Confederação dos Agricultores de Portugal http://www.cap.pt/ •BALADI- Federação Nacional dos Baldios https://www.facebook.com/Federa%C3%A7%C3%A3o-Nacional-dos-Baldios-257792997725879/
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	There is a legal framework which includes the need of identification and map all national Natural Values by national authorities with a deadline of October 2017. HCV used for the current Risk Analysis are based on those defined for FSC in Portugal by FSC Portugal, updated by Portugal CW CNRA: HCV 1: Classified Areas (1.1), Protected species with threatened status (1.2), Endemic species (1.3), critical seasonal use areas (1.4) and critical connectivity forests areas (1.5). HCV1.1- Classified areas include the following type of areas: -Classified areas of the National System of Classified areas which include Protected Areas, Natura2000 areas and also all areas included on International conventions ratified by Portuguese state as RAMSAR sites, biogenetical and biosphere reserves. -IBA's – Important Bird and Biodiversity Areas HCV 1.2 – Protected species with threatened status include: -Endangered species according to the classification adopted by the International Union for the Conservation of Nature (IUCN) to endangered species: critically endangered (CR), Endangered (EN) and vulnerable (VU); - In addition to those are also considered protected species contained in the legal conservation instruments in force in Portugal (Habitat and Birds Directives, CITES, Bern Convention, Bonn Convention), which may not be integrated into threat categories above. HCV 1.3 - Endemic species includes

- species whose distribution is exclusively on the Portuguese territory;

HCV1.4 Critical seasonal use areas including critical areas of refuge, breeding or migration routes in Portuguese territory

- Autumn migration corridors of birds in the Southwest Alentejo and Costa Vicentina Region;
- Areas of concentration and passage of steppe birds (bustard, little bustard);
- Preys breeding areas with threatened status;
- Concentration in wetland wintering birds;
- Bats refugees considered important to national, regional and local scale.

HCV 1.5 -Forests that provide regionally significant habitat connectivity between large forest areas or between refuges and mosaics, as defined by ecological corridors by Regional Management Plans.

HCV2: Cork oak and holm oak formations occurring in Portugal are in the heathlands of the Tagus and Sado (cork) and Guadiana Valley (oak) under the form of woodlands or montados.

HCV3: Areas included or containing rare ecosystems, threatened or endangered (classified as priority habitats by Natura 2000).

Priority classified habitats, are found inside and outside classified areas.

HCV4: Areas that provide basic services in critical situations, like flood protection in river basins, soil conservation and protective against forest fires.

These areas include:

- forests located in critical areas in river basins, such as floodplains and sloping areas, as defined and mapped in REN-National Ecological Reserve.
- critical areas to prevent forest fires including low combustibility plots and strips.

HCV5: Forest areas fundamental to meeting basic needs of local communities, like aquifers with recharge rates greater than 175 mm / year covered by cork oak and holm oak stands, assuming that these settlements contribute to the infiltration of water for consumption, and regulate the hydrological cycle and prevent soil erosion.

HCV6 – Critical forest areas to local communities' traditional cultural identity, as near and/or adjacent to national classified monuments, and also trees and stands classified as public interest according to Law No. 53/2012 of September 5th.

According to this definition all the HCV areas are conceptually defined, but not all of them are identified or mapped.

Mapped areas on digital (vector and/or raster format) include:

- all classified areas described as HCV1.1, HCV 1.5, HCV2, HCV4, HCV5, HCV 6.

	- some of the areas described as HCV 1.2, HCV 1.3, HCV1.4; HCV3. These areas should be mapped inside FSC and PEFC certified areas and also where any territory Plan (for example Forest Management Plan, Game Management Plan) is sufficiently recent, detailed and accurate. Therefore, according to the available information there are specified risks that important species or habitats are not identified and mapped as following: - HCV 1.2 -Endangered species according to the classification adopted by the International Union for the Conservation of Nature (IUCN) to endangered species: critically endangered (CR), Endangered (EN) and vulnerable (VU). And also protected species contained in the legal conservation instruments in force in Portugal (Habitat and Birds Directives, CITES, Bern Convention, Bonn Convention), which may not be integrated into threat categories above; - HCV 1.3 -Endemic species - HCV 1.4 - Critical seasonal use areas including critical areas of refuge, breeding or migration routes in Portuguese territory, detailed above. HCV3- Areas included or containing rare ecosystems, threatened or endangered (classified as priority habitats by Natura 2000), found inside and outside classified areas. All the other areas are identified and mapped so they are low risk according to this indicator
Means of Verification	-Internet research -GIS maps of HCV areas -Interviews -Priority Classified Habitat and species catalogue. -Regional, publicly available data from a credible third party as FSC and PEFC reports
Evidence Reviewed	Law for natural values cadastre: Decree-Law n.º 242/2015 at 15/10 https://dre.pt/application/conteudo/70693924 Bugalho, M. 2011 "Interpretação Nacional das Florestas de Alto Valor de Conservação" <i>Documento de base Trabalhos realizados pelo GT IN FAVC do FSC Portugal</i> HABEAS: http://www.habeas-med.org/webgis/pt_en/ LEAF_EPICWebGiSPortugal: http://epic-webgis-portugal.isa.ulisboa.pt/maps/epic?format=image/png;%20mode=8bit&startExtent=-1523000,4400000,-143668,5180000 SNAC : Legislation https://dre.pt/application/file/70698029 RNAP: http://www.icnf.pt/portal/ap/ap Rede Natura 2000: http://www.icnf.pt/portal/naturaclas/rn2000 Important Bird Areas of Portugal at: http://ibas-terrestres.spea.pt/ - Site characterization SIC e ZPE: http://www.icnf.pt/portal/naturaclas/rn2000/p-set/Plan-set-docs

Cartography: <http://www.icnf.pt/portal/naturaclas/cart>

-Protected area plans: <http://www.icnf.pt/portal/naturaclas/ordgest/poap>

-Data Base for fauna and flora specific plans:
<http://www.icnf.pt/portal/naturaclas/patrinatur/especies>

-Red book for Portuguese Vertebrates (2005):
<http://www.icnf.pt/portal/naturaclas/patrinatur/lvv>

- Nesting and wintering Bird Atlas on Portugal (2008): ND online
Cartography (2015) <http://webgis.spea.pt/AtlasAvesInvernantesMigradoras/>

- Reptile and amphibious of Portugal (2008):
<http://www.icnf.pt/portal/naturaclas/patrinatur/atlas-anfi-rept/anfibios>

- Fresh water Fish National cartography :<http://www.cartapiscicola.org/#>

- Flora identification: <http://www.icnf.pt/portal/naturaclas/rn2000/p-set/psrn-flora>

-Flora cartographic source: <http://www.flora-on.pt/>

-National Conservation Plano of threatened Flora information
<http://www.icnf.pt/portal/naturaclas/patrinatur/conserv-flora-perigo>
http://naturdata.com/index.php?option=com_content&view=article&id=78&Itemid=60

Electric wire line manual (ICNB 2008)
:<http://www.icnf.pt/portal/naturaclas/ordgest/aa/resource/doc/man-infra-lin>

Regional Forest Plans (PROF): <http://www.icnf.pt/portal/florestas/profs>

AIIF :http://www.aiif.org.pt/assets/ESTUDO_Prospetivo_-_Sector-Florestal.pdf

AIIF: <http://www.aiif.org.pt/assets/Relatorio-de-Characterizacao-da-Fileira-Florestal-2014-160p-CAPA-3-spread....pdf>

ICNF: <http://www.icnf.pt/portal/florestas/ifn/resource/ficheiros/ifn/ifn6-res-prelimv1-1>

UNECE:
https://www.unece.org/fileadmin/DAM/publications/timber/Forest_Europe_report_2011_web.pdf

ICNF: <http://www.icnf.pt/portal/florestas/dfci/Resource/doc/rel/2013/relatorio-dfci-ap-2013>

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ICNF <http://www.icnf.pt/portal/florestas/dfci/relat/raa/resource/ficheiros/rel-tec/picoes-rel-tecn>

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QUERCUS: <http://www.quercus.pt/comunicados/2009/maio/924-especies-invasoras-continuam-sem-controlo>

UNECE
https://www.unece.org/fileadmin/DAM/publications/timber/Forest_Europe_report_2011_web.pdf

Martins M.J & Cerdeira, J.O. (2009) A Language and Environment for Statistical Computing. Vienna, Austria, R Foundation for Statistical Computing; & Autoridade Florestal Nacional, 2010, Florestat – Aplicação para a Consulta dos Resultados do 5º Inventário Florestal Nacional. Disponível em <http://www.icnf.pt/portal/florestas/ifn/ifn5/florestat> in

Habeas - Habeas-Hotspot Areas for Biodiversity and Ecosystem Services
http://www.habeas-med.org/webgis/pt_en/

	ICNF: http://www.icnf.pt/portal/florestas/ifn/resource/ficheiros/ifn/ifn6-term-def APFC: http://www.apfc.pt/xms/files/Eventos/Projetos_APFC_para_a_sanidade.pdf INIAV: http://www.inia.pt/fotos/gca/livro_causas_doc_sintese_1369127896.pdf ICNF: http://www.icnf.pt/portal/florestas/foflo/pdr2020/resource/doc/Areas-rrc-v-final.pdf Planos de Gestão Florestal de áreas públicas: http://www.icnf.pt/portal/florestas/gf/pgf/publicitacoes/encerradas Kirkby, M.J <i>et al.</i> European Soil Bureau Research Report No.16, EUR 21176, 18pp. and 1 map in ISO B1 format. Office for Official Publications of the European Communities, Luxembourg. European Soil Portal, 2013, http://eusoils.jrc.ec.europa.eu/ESDB_Archive/eusoils_docs/esb_rr/n16_ThePeseraMapBkLet52.pdf Autoridade Florestal Nacional, 2010, Florestat – Aplicação para a Consulta dos Resultados do 5º Inventário Florestal Nacional. Disponível em http://www.icnf.pt/portal/florestas/ifn/ifn5/florestat Reserva Ecológica Nacional https://dre.pt/application/dir/pdf1sdip/2012/11/21200/0630806346.pdf Sistema Nacional de Defesa da Floresta Contra Incêndios: https://dre.pt/application/dir/pdf1sdip/2006/06/123A00/45864599.pdf ICNF http://www.icnf.pt/portal/florestas/dpci/relat/raa/resource/ficheiros/ree2012/rel-recup-inc-catraia-set-v5 PANCD https://dre.pt/application/file/65985917 PDR2020 http://www.pdr-2020.pt/site/O-PDR2020/Arquitetura/Area-3-Ambiente-Eficiencia-no-Uso-dos-Recursos-e-Clima/Medida-7-Agricultura-e-Recursos-Naturais/Acao-7.11-Investimentos-nao-produtivos/Operacao-7.11.1-Investimentos-nao-produtivos Fundo Florestal Permanente: http://www.icnf.pt/portal/icnf/noticias/gloablnews/fundo-florestal-permanente-ffp Alves, A. M., Pereira, J. S., Correia, A. V., 2012. Silvicultura - A gestão dos ecossistemas florestais. Fundação Calouste Gulbenkian. ICNF http://www.icnf.pt/portal/florestas/aip/aip-monum-pt DRE: http://www.icnf.pt/portal/icnf/legisl/legislacao/2012/lei-n.o-53-2012-de-5-de-setembro.-d.-r.-n.o-172-serie-i
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	Suppliers Qualification and Control Program (PSI 16 -Programa de Qualificação e Controlo Fornecedores), including consultation of cartography and others information

	sources, and verification that forests and other areas with high conservation values (HCV), specifically HCV 1.2, HCV 1.3, HCV 1.4 and HCV 3, are identified and mapped. Disqualify material coming from areas where high conservation values are not identified and mapped.
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	Indicator
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.
Finding	<u>HCV1</u> In Portugal, significant biodiversity values are covered by the National System Classified Areas and the IBA's (English Important Bird and Biodiversity Areas). A significant part of the conservation values identified in HCV 1 is threatened by forest operations in terms of removal, habitat fragmentation and destruction. The main source of these risks is the conversion to plantations of exotic species and non-forest uses (see indicator 2.1.3 below), although on a different scale, other forest management operations can affect the identified values, such operations of maintenance and logging. Conversely, the lack of forest management and abandonment causes negative impact on different habitats, as they increase the risk of disturbances by biotic and abiotic factors such as fire, plagues and invasive species. These disturbances by biotic and abiotic agents affect existing habitats in protected and classified areas considering the fact that Portugal is the European country with the highest proportion of area affected by disturbances (24.5%) as stated in UNECE report (2011). In this report disturbances include abiotic and biotic factors such as pests and insects, fires, drought, grazing among others. In short, the different conservation attributes described in the various subcategories of HCV1 are concentrated mainly in Classified Areas by SNAC and the IBA's. However there are threats to conservation attributes resulting from forestry operations in Classified Areas and IBA's which are not included in the National Network of Protected Areas RNAP (2/3 of the total area is not included) and its safeguards are not proportional to the magnitude of these threats: - there aren't Site Management Plans or a consistent program of dissemination of good practices on forest areas classified Natura 2000, involving the referred agents; - the areas are not identified on the ground or in their access;

- there is not a close inspection regime implemented properly and consistently throughout the national territory;

In the case of forest areas included in the RNAP, there is further consolidation in the field over time, which provides more proportionate safeguards to the level of existing threats:

- there are information boards in many of the surrounding access to protected areas;
- There are Management Plans which are already in the second generation in most cases;
- There is a history of proximity to the population and those involved in forest management, because they were stabilised long time ago and over time have provided personalized services for each protected area, related to its own management and "command and control" services included nature or forest body guards or watchmen.
- There are more details in the information published about the effects of disturbances such as fires on habitats.

HCV2

The regulation implemented in Portugal on oak and holm trees and stands, includes a comprehensive legislative framework with a legal action planning and project but also cuttings protection. This legislation also meet forest management measures themselves related to intensity of exploitation, such as the stripping and pruning.

This regulation is relatively well established and disclosed have being assimilated by the various agents involved as owners, managers, and operators. Also the planned forest management and the proper certification of sustainable forest management expanded in Portugal in recent years is currently counting about 236 000 hectares certified forests entering the cork and holm oak species (is not robust statistics on the certified specific area with cork oak stands).

Following several surveys on the fragilised state of cork and holm oak stands, there were also developed various processes to improve forest management practices, which were disclosed by the various entities involved. This includes a variety of contents and formats such as codes of good cork forest practices but also pest and disease identification guides. More recent investment lines have been created supported by EU grants to assist owners and managers in pest monitoring of cork and holm oak stands (Operation 8.1.3 - Prevention of forest against biotic and abiotic agents) and for health recovery and restoration of forest stands of cork oak (Operation 8.1.4 - forest Restoration affected by biotic and abiotic agents or catastrophic events).

The most current detailed results achieved by management and improvement actions on forest stands are not fully known, since the full values of the last national inventory (IFN6) are still missing, however it is known that the class of "wooded area with cork oak" had an increase of 6% from 1995 to 2010, and holm oak has decreased 3% in the same period.

HCV3

Priority habitats are protected by a legal framework, but their protection on the ground is not strong, except when they are located inside Protected areas.

The threats caused by forest management activities on priority habitats are related to the destruction of the habitat itself by logging, applying in this case the habitats with timber species and also the impacts on understory habitats or surrounding areas.

In the first case, where there are risks of logging of forest species which are themselves the priority habitats and are classified as for example 2270 dunes with *Pinus pinea* forests and / or *Pinus pinaster*, 91E0 alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae), 2250 Coastal dunes with *Juniperus* spp., 5230 Arborescent matorral with *Laurus nobilis*, 9560 Endemic Mediterranean forests with *Juniperus* spp., 9580 Mediterranean forests of *Taxus baccata*, among others.

In the second group are found many understory habitats.

As an example the priority habitat 2270 is briefly characterized by sand dunes Mediterranean pine forests, occurs in a stripe within the sea 15Km and the Tagus and Sado and is dominated by:

- Pinus pinaster* that have not been subject, in the past 20 years, to operations in understory and may be mature plantings (> 80 years) or regeneration of pine forests (> 30 years).
- Pinus pinea* in dune systems in the Algarve, with evolved matorral.

Since both species are exploited for timber (the stone pine is also exploited for pine cone) and the maritime pine is one of the woody species most exploited in Portugal, this habitat is subject to threats of exploitation as cutting and thinning but also all understory operations. That's why its conservation state is considered by ICNF as inadequate/unfavourable from 2008 to 2013.

HCV 4 & HCV 5

There are threats to forests located in critical areas in river basins, such as floodplains and steep areas, and aquifers as defined and mapped in REN-National Ecologic Reserve. Many of these threats include the conversion to forest plantations or other non-forest uses, and are addressed at following indicator 2.1.3.

It has been identified very negative effects as a consequence of large forest fires on the river basin, affecting qualitative and quantitative hydrological flows in the following periods. In such cases the forest authorities (ICNF) develop and promote specific plans for the recovery of burned areas with precise information on the destinations of the timber.

There are also threats of lesser magnitude caused in private forests, arising from inadequate operations of harvesting and / or maintenance. These operations include tools, interventions and inadequate intensity to the sensitivity of soils and vegetation in these critical areas to the protection of floods. However, the reduced scale of the most forest operations contributes to the reduction of the magnitude of the identified risks.

Existing safeguards to prevent these threats of critical forest areas for watershed protection, includes the existing legal framework, the available EU grants and also the non-commercial nature of some of the species that make up these forest areas.

Legal framework includes the protection of riparian species and essentially the National Ecological Reserve. These rules have been implemented through various instruments and regulations, which explicitly reached the forest owners and managers through PROF, PGF, PUB and PEIF.

However, legal framework doesn't include any limitation over maximum area of clearcutting methods in Portugal, and this is considered a threat to soil and water protection (among others).

HCV 6

Classified trees and stands as public interest are protected by law, and the legal protection of monuments includes sometimes gardening forest and surrounding areas. It is considered there are no significant threats by the forest management activities to HCV6 present in the analysis area.

Resuming

In Portugal potential threats to forest and other HCV areas from forest management activities can be found in both of the areas where the HCV were identified and also where the HCV were not identified.

This situation is the result of the absence of a forest cuttings policy for commercial felling in the country, among other situations related to legislation and its enforcement.

Risk Conclusion

HCV 1- In private and communitarian forest areas classified by the National System of Classified Areas (SNAC) and in the forest areas considered IBAs (Important Bird and Biodiversity Areas), not covered by the National Network of Protected Areas RNAP, there are specified risks that HCV1 attributes are threatened by forest management operations such as harvesting or maintenance.

HCV 2- Is well identified in the country as well as its threats. It is considered that the existing safeguards are sufficient to reduce the risks posed by these threats, so there is a low risk involved.

	HVC 3 - It is considered that the threats on priority habitats on private and communitarian, and public forest areas not managed by ICNF, are not properly safeguarded by existing safeguards, and so there is a specific risk that they were threatened by forest operations. HCV4 & HCV5 - It is considered specified the risk on private, communitarian, and public forest areas not managed by ICNF, subject to exploitation by clear cutting at dimensions above to the maximum area indicated for each region by PROF Regional Forestry Management Plan. HCV 6 –Low risk.
Means of Verification	FSC or PEFC Forest management certificate public reports Forest Management plan as PGF, PUB, PEIF Game management plans Regional Forest Plans Forest Best Management Practices Forest Operating Procedures Records of BPs' field inspections Monitoring records Interviews with staff Publicly available information on the protection of the values identified Regional, publicly available data from credible third parties
Evidence Reviewed	<i>Bugalho, M. 2011 "Interpretação Nacional das Florestas de Alto Valor de Conservação" Documento de base Trabalhos realizados pelo GT IN FAVC do FSC Portugal</i> HABEAS: http://www.habeas-med.org/webgis/pt_en/ LEAF_EPICWebGiSPortugal: http://epic-webgis-portugal.isa.ulisboa.pt/maps/epic?format=image/png;%20mode=8bit&startExtent=-1523000,4400000,-143668,5180000 SNAC : Legislation https://dre.pt/application/file/70698029 RNAP: http://www.icnf.pt/portal/ap/ap Rede Natura 2000: http://www.icnf.pt/portal/naturaclas/rn2000 Important Bird Areas of Portugal at :http://ibas-terrestres.spea.pt/ - Site characterization SIC e ZPE: http://www.icnf.pt/portal/naturaclas/rn2000/p-set/Plan-set-docs Cartography :http://www.icnf.pt/portal/naturaclas/cart -Protected area plans: http://www.icnf.pt/portal/naturaclas/ordgest/poap -Data Base for fauna and flora specific plans: http://www.icnf.pt/portal/naturaclas/patrinatur/especies -Red book for Portuguese Vertebrates (2005): http://www.icnf.pt/portal/naturaclas/patrinatur/lv

- Nesting and wintering Bird Atlas on Portugal (2008): ND online
Cartography (2015) <http://webgis.spea.pt/AtlasAvesInvernantesMigradoras/>

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<http://www.icnf.pt/portal/naturaclas/patrinatur/atlas-anfi-rept/anfibios>

- Fresh water Fish National cartography : <http://www.cartapiscicola.org/#>

- Flora identification: <http://www.icnf.pt/portal/naturaclas/rn2000/p-set/psrn-flora>

-Flora cartographic source: <http://www.flora-on.pt/>

-National Conservation Plano of threatened Flora information
<http://www.icnf.pt/portal/naturaclas/patrinatur/conserv-flora-perigo>
http://naturdata.com/index.php?option=com_content&view=article&id=78&Itemid=60

Electric wire line manual (ICNB 2008)
[:http://www.icnf.pt/portal/naturaclas/ordgest/aa/resource/doc/man-infra-lin](http://www.icnf.pt/portal/naturaclas/ordgest/aa/resource/doc/man-infra-lin)

Regional Forest Plans (PROF): <http://www.icnf.pt/portal/florestas/profs>

AIIF : http://www.aiff.org.pt/assets/ESTUDO_Prospectivo_Sector-Florestal.pdf

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UNECE:
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WILDER: <http://www.wilder.pt/historias/pedida-actualizacao-de-lei-com-16-anos-sobre-especies-invasoras/>

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ICNF: <http://www.icnf.pt/portal/florestas/foflo/pdr2020/resource/doc/Areas-rrc-v-final.pdf>

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Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA

Comment or Mitigation Measure	• Suppliers Qualification and Control Program, including consultation of information sources regarding HCVs and procedures for conduct specific field audits to identify and address real and potential threats to forests and other areas with high conservation values, specifically HCV 1, HCV 2, HCV 3 and HCV 4, which were previously identified and mapped. • Disqualify material coming from areas where forest management and operations represent evident threats to HCV 1, HCV 2, HCV 3 and HCV 4. • Promotion of Good Forest Practices • Monitoring plan
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	Indicator
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.
Finding	The definition of "forests" in Portuguese legislation includes natural forest, plantations, managed forest and as well as non managed forest. Definition of "plantations" is similar to FSC¹, PEFC or SBP systems. The term "conversion" is used in Portuguese forestry legislation when a forest is transformed to a forest plantation. Protection laws focuses much more on particular species, rather than the intensity grade of silvicultural system used. As a result, specific legislation prohibiting conversion of forest (natural or planted) to plantations or other land uses does not exist in the forest legal framework, except in cases of protected sites and species, or after forest fires. For example, conversion from forest land to other uses (below 50ha) or to fast growth plantation (below 350 ha) is legal if it occurs in a contained (discontinuous) area. Above those areas conversion requires an approved Environment Impact Assessment. Conversion from forests to plantations has been even granted with some EU subsidies over the time. Data from last forest inventory ICNF, show a conversion from 1995 to 2010 of 247.000ha of forest use to Plantations, Agriculture, Urban and Shrubs, meaning an annual net decreasing of 16.440 ha (0,7 %/year). A recent report from the forest authority, ICNF, shows that a total of 4304 ha of land with various species was legally converted to eucalyptus plantation between 17/10/2013 and 25/01/2016 (excluding areas below 0.5ha). Concluding, it is clear that two types of conversion are detected in Portugal:

	a) Legal type, which covers the majority of areas, including conversion to fast growth forest plantation or other plantations, agriculture, urbanization and dams. b) Illegal type, where conversion data is more complex and difficult to report. These cases are often reported in the media and NGO communications. Considering the absence of complete legislative requirements regulating the conversion of forests to plantation and the statistics about the area converted after 2008., it is considered a specified risk that feedstock is sourced from forests converted to production plantation forest or non-forest lands after January 2008.
Means of Verification	Historical maps and enquiries with stakeholders Regional, publicly available data from a credible third party Records of BPs' field inspections Monitoring records Aerial photos
Evidence Reviewed	ICNF -Ações de arborização e rearborização. Principais indicadores (outubro de 2013 a janeiro de 2016) Nota informativa n.º 4: http://www.icnf.pt/portal/florestas/arboriz/resource/docs/not-info/RJAAR-nota-informativa-n4-jan2016.pdf • ICNF, 2013. IFN6 – Áreas dos usos do solo e das espécies florestais de Portugal continental. Resultados preliminares. [pdf], 34 pp, Instituto da Conservação da Natureza e das Florestas. Lisboa. http://www.icnf.pt/portal/florestas/ifn/resource/ficheiros/ifn/ifn6-res-prelimv1-1 • "Abate de centenas de azinheiras e sobreiros para instalação de olival intensivo", 2006 Quercus - Associação Nacional de Conservação da Natureza at: http://www.quercus.pt/comunicados/2006/outubro/1650-abate-de-centenas-de-azinheiras-e-sobreiros-para-instalacao-de-olival-intensivo • "Obras no terreno continuam após abate ilegal de azinheiras promovido por empresários espanhóis para plantação de olival intensivo" 25/09/2008 Direcção Nacional da Quercus – Associação Nacional de Conservação da Natureza & Núcleo Regional de Beja/Évora http://www.quercus.pt/contactos/341-comunicados/2008/setembro/1222-obras-no-terreno-continuum-apos-abate-ilegal-de-azinheiras-promovido-por-empresarios-espanhois-para-plantacao-de-olival-intensivo • Natural Forest Area change 2010-2015 Map at Global Forest Resources Assessments-FAO - Food and Agriculture Organization of the United Nations at http://www.fao.org/forest-resources-assessment/current-assessment/maps-and-figures/en/ • Forest Change - GIS/Map in Global Forest Watch at: http://www.globalforestwatch.org/map/5/39.60/-8.50/PRT/grayscale/loss,forestgain?begin=2001-01-01&end=2014-12-30&threshold=30

	Legislation: • Conversion from natural <i>Quercus suber</i> and <i>Quercus rotundifolia</i> to other land uses: DL 169/2001, de 25/05 Artº 2º https://dre.pt/application/dir/pdf1sdip/2001/05/121A00/30533059.pdf updated by DL155/2004, 30/06 https://dre.pt/application/dir/pdf1sdip/2004/06/152A00/39673968.pdf • Conversion inside Protected and Classified areas: DL142/2008 at 24/07 Artº 43º https://dre.pt/application/dir/pdf1sdip/2008/07/14200/0459604611.PDF DL 49/05 24/02 https://dre.pt/application/dir/pdf1sdip/2005/02/039A00/16701708.pdf • Destruction of natural riparian vegetation: Law 58/2005 29/12; Law 54/2005, at 15/11 (Artº 25º) https://dre.pt/application/dir/pdf1sdip/2005/11/219A00/65206525.pdf • Conversion from natural <i>Ilex aquifolium</i> DL 423/89, 4/12 (Artº 1) https://dre.pt/application/dir/pdf1sdip/1989/12/27800/52915292.pdf • Conversion from natural landscapes and hillside/slope erosion: DL 139/89 28/04 artº1 http://www.icnf.pt/portal/icnf/faqs/arbordl139-89 • Conversion by deforestation above 50ha (10ha in Sensitive Areas) or for reforestation with fast growth forest species on areas above 350ha (or 70 ha in sensitive areas) DL 151-B/2013 Artº 1º https://dre.pt/application/dir/pdf1sdip/2013/10/21102/0000600031.pdf
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	• Suppliers Qualification and Control Program (PSI 16 -Programa de Qualificação e Controlo Fornecedores), including consultation of information sources regarding historical and stakeholders information, procedures to access information from the forest owner regarding the past and future area's covering and use, and procedures for conduct monitoring field audits to verify if feedstock is or is not sourced from forests converted to production plantation forest or non-forest lands after January 2008. • Disqualify material coming from areas where natural forest were converted into Eucalyptus or other plantation from 2008, or to be converted with Eucalyptus or other plantation, or transformed into pasture, agriculture or other non-forest use; • Promotion of Good Forest Practices • Monitoring plan

	Indicator
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.
Finding	Most environmental legal requirements relating to forestry planning activities are included in Portugal's forestry legislation. In the administrative process of forest planning or

	forestation projects, the competent entities are centrally consulted by the national forest authority (ICNF). Management Plans including Forest Intervention Zone (ZIF), Community Use Area Plan (PUB) and Intervention Special Plan (PEIF) have been in place since 2000, and (to 2013) cover about 44% of Portuguese forest area. In private areas, forest plans are mandatory for all forest areas greater than a certain area (from 25ha to 100ha, depending on the region); however lack of this requirement has not resulted in any known penalties. In public areas, forest plans are obligatory for all areas; however numbers from 2012 indicate that only 43% of these forests have the PGF. As of 2015, it is an objective of the forest authority ICNF that 100% of its areas should have a PGF by 2017. In communitarian forests plans are obligatory for all areas however 2015 data show that Forest Plans (PUB) are in place in only 60% of cases. Forest Management Plans should include identification of most part of potential impacts and measures to minimize them. However it is not a specific tool used to monitor environmental impacts. Legal impact assessment and monitoring processes are the activities that need an Environmental Impact Assessments like conversions above 50ha or reforestations with fast growth species above 350ha. These figures are lower when they occur inside Sensitive Areas (Protected, Classified and Monumental Areas), where it is obligatory to have this approved EIA if conversion to non-forest uses involves an area greater than 10 ha or forestation/reforestation is taking place with fast-growing forest species covering over 70 ha. However the described legal framework doesn't include the impact assessments to ordinary clear cuts, neither it was found national legislation or policies about maximum size of clear cuttings. The exceptions are the Regional Forest Plans of some of the Northern regions, where 10 hectares is defined as the maximum clearcuttings area. Also some Municipalities may have municipal regulations about clearcutting fellings. So it is considered there are specified risks that feedstock is sourced from forests where there is no appropriate assessment of impacts, when clear cuttings are done over a specific size area. This specific area is defined regionally by each Regional Forest Plan (PROF), as the maximum clearcutting area or the size of even aged monoespecific forest stand. This risk is associated to private and communitarian, and public forest properties not managed by Forest Services (ICNF)..
Means of Verification	Approved EIA when applicable. Approved Forest Management Plan when applicable Records of oil and hazardous chemicals deliveries.

	Manifest Records of BPs' field inspections Monitoring records Regional Forest Plan
Evidence Reviewed	Government sources • Instituto da Conservação da Natureza e Florestas at http://www.icnf.pt/portal • APA-Agência Portuguesa de Ambiente at http://apambiente.pt/index.php • Municipalities at (<a href="http://www.cm-<NAME>.pt/">http://www.cm-<NAME>.pt/) • Alvaizere Municipalitie forest regulation includes clearcutting fellings: http://ftp.cm-alvaizere.pt/regulamentos/Regulamento_florestal.pdf Non-Government sources • Quercus - Associação Nacional de Conservação da Natureza at http://www.quercus.pt/ • LPN-Liga para a Protecção da Natureza at http://www.lpn.pt • GEOTA - Grupo de Estudos de Ordenamento do Território e Ambiente at http://www.geota.pt/scid/geotawebpage • Greenpeace International at http://www.greenpeace.org/international/en/ • World Wildlife Fund -Portugal at: http://www.wwf.pt/ Legislation: National Ecological Reserve • DL 239/12 at 2/11 artº20ºnº1 e) EIA • DL 151-B/2013 de 31/10 artº 1º nº3 b) Anexo II https://dre.pt/application/dir/pdf1sdip/2013/10/21102/0000600031.pdf DLnº 47/2014, 24/03 31/10 DLnº 179/2015, 27/08 artº2º • Environment Law Lei de Bases de Política do Ambiente: Lei n.º 19/14 de 14/04 artº10ºd) DL nº49/05, de 24/02 artº20º • DL 197/2005, de 8/11 artº 1º, nº3 b) e nº4, Machinery • NP 1948, de 1994 Forest Equipament Chainsaw: • NP 2761, de 1988 • NP EN 13525:2005+A2:2009 Forest fire areas: • DL nº55/2007, de 12/03 artº1º • Lei n.º 54/91, de 8/08 • DL nº34/99, de 5/02 artº1º • Ministry Council Resolution nº 5/2006, de 18/01
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	• Suppliers Qualification and Control Program, including consultation of information sources and legislation regarding impact assessment, procedures to access information from the area regarding social and environmental aspects, and procedures for conduct monitoring field audits to verify social and environmental aspects and the appropriate assessment, planning and implementation of measures for minimise real or potential impacts, especially in case of clear cuttings made over a specific size area, defined regionally by each Regional Forest Plan (PROF), as the maximum clearcutting area or the size of even aged monoespecific forest stand.

	• Disqualify material coming from areas where no appropriate assessment of impacts, and planning, implementation and monitoring to minimise them, is confirmed; • Promotion of Good Forest Practices • Monitoring plan
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	Indicator
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).
Finding	Forest residues removal from the field is regulated in Portugal, so loggers and owners have some legal obligations, related with both fire and phytosanitary policies. These obligations are depending on species, areas, seasons and regions. On the other side it is recognized the problem of nutrient and carbon exportation due to harvesting and residues removal in a significant part of the country which is affected by erosion and desertification problems. Madeira.M , Fabião A., et all (2009) study about long term pine stand suggest that system disturbances associated with stand exploitation (harvesting, log removal, harvest residues removal, microclimate changes) may provoke strong variations on the organic C stock and nutrient availability. Proper site management to avoid organic matter and nutrient losses are crucial to assure system sustainability. Other study Madeira, M. (2015) of 30 years in Portuguese soils concludes that “forest residues could be used in production energy, since the site (soil) presents sufficient resilience to nutrient removal however, it takes long-term studies to support such a generalization”. Magalhães, M., Cameira M.,et all (2011) study on soil effect of biomass removal also confirms nutrient exporting as a problem on soil fertility and productivity. FAO- Land Degradation Index — LDI, developed for mainland Portugal (2000-2010) states that the national territory has 32.6% degraded lands and 60.3% are included in the fair to good condition. Lands and soils that accumulate biomass over time are about 67,8% but static trends were observed in 30,8% of territory and 1,5% have a regression on land quality. Later on, Forest Services used aridity index to produce the susceptible map of desertification, indicating priority areas for EU forest grants for forestation projects. The results of this FAO study, among others, where used to create National Program Against Desertification, which is adopted, among others by Regional Forest Plans, defining forest procedures for spaces for carbon sink and other for energetic use of biomass. The private and

	public Forest Management Plans should adopt these designations and procedures on their implemented management practices and procedures. Process of forest residue treatment is commonly included on Best Practices but also on wood supply contracts, and forest land leasing. Nevertheless it is not known the enforcement of the soil practices and procedures at the ground level, because it was not found any information about monitoring works (see indicator 2.2.1 above). On small size forest properties most part of these actions are simplified or they are not legally required. However it is considered that its small scale also reduces the threats and risks involved with those operations. According to the available information it is considered specified the risks for soil quality of sourcing biomass feedstock on: -forest lands located on desertification susceptible area according to Forest Services (ICNF) cartography. - and - with size above minimum size required for Forest Management Plan, Other cases are considered low risk for this indicator.
Means of Verification	Best Management Practices; Records of BP's field inspections; Assessment at an operational level of measures designed to minimise impacts on the values identified Level of enforcement Regional, publicly available data from a credible third party Erosion and desertification programs and maps
Evidence Reviewed	National System for Forest Fire Prevention: Harvesting temperate forests reduces soil carbon http://ec.europa.eu/environment/integration/research/newsalert/pdf/23si6_en.pdf Susceptible areas to desertification map: http://www.icnf.pt/portal/naturaclas/ei/unccd-PT/pancd/o-pancd-2014-2020/pdr-2020-areas-susceptiveis-e-nao-susceptiveis-a-desertificacao ICNF http://www.icnf.pt/portal/florestas/dfci/relat/raa/resource/ficheiros/ree2012/rel-recup-inc-catraia-set-v5 PANCD https://dre.pt/application/file/65985917 Reserva Ecológica Nacional

	https://dre.pt/application/dir/pdf1sdip/2012/11/21200/0630806346.pdf Kirkby, M.J., Jones, R.J.A., et al (2004). Pan-European Soil Erosion Risk Assessment: The PESERA Map, Version 1 October 2003. Explanation of Special Publication Ispra 2004 No.73 (S.P.I.04.73). European Soil Bureau Research Report No.16, EUR 21176, 18pp. and 1 map in ISO B1 format. Office for Official Publications of the European Communities, Luxembourg. European Soil Portal, 2013, http://eusoils.jrc.ec.europa.eu/ESDB_Archive/eusoils_docs/esb_rr/n16_ThePeseraMapBkLet52.pdf Good Forest Practices http://www.icnf.pt/portal/florestas/gf/documentos-tecnicos/resource/doc/Boas-Praticas-Florestais.pdf LEAF: Epic WebGis Portugal: http://epic-webgis-portugal.isa.ulisboa.pt/maps/epic?format=image/png;%20mode=8bit&startExtent=-1523000,4400000,-143668,5180000 Pinus Nematode: •Dec.Retificação n.º 38/2015 de 01/09 •DL 123/15, at 3/07 •DL 95/2011, de 8/08 •DL 154/05 6/09 •Dec. n. 30-A/2011, de 7/10 Madeira.M , Fabião A., Páscoa F., Magalhães M., Cameira,M , Ribeiro C. (2009) Carbon and nutrient amounts in aboveground biomass, understory and soil in a pine stand chronosequence, http://www.scielo.mec.pt/pdf/rca/v32n2/v32n2a15.pdf Madeira, M. (2015) Thirty years of research on soil quality in forest systems under Mediterranean conditions. Trends and future. http://www.repository.utl.pt/bitstream/10400.5/9277/1/REP-M.Madeira-Spanish%20j.S.C..pdf Magalhães, M., Cameira M., Pato, Santos R. & Bandeira, J (2011) Residual forest biomass: effects of removal on soil quality http://www.scielo.mec.pt/scielo.php?script=sci_arttext&pid=S0871-018X2011000200019
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	• Suppliers Qualification and Control Program, including consultation of information sources and legislation related with soil aspects, procedures to access information from the area regarding soil erosion, and procedures for conduct field audits to verify if forest management maintains or improves soil quality, especially in forest lands located on desertification susceptible area according to Forest Services (ICNF) cartography and with size above minimum size required for Forest Management Plan in respective PROF.

	• Disqualify material coming from areas where is confirmed that forest management do not maintains or improves soil quality. • Promotion of Good Forest Practices • Monitoring plan
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	Indicator
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).
Finding	For better understanding of key ecosystems and habitats identification see indicator 2.1.1, and for its conservation see indicator 2.1.2. In Portugal key ecosystems and habitats are to be found mostly in Protected areas and in Classified Areas (Natura 2000). The overlap of classified areas over protected areas is approximately 1/3 of the total, which means that approximately 2/3 of classified areas are not included in protected areas of the National Network of Protected Areas. Also there are key ecosystems and habitats occurring outside Protected and Classified areas. It is considered that this indicator is covered and detailed by indicator 2.1.2, for which low risk was not reached in this risk assessment. Same mitigation measures must be carried out to minimize the specified risks found.
Means of Verification	Best Management Practices Supply contracts Assessment of potential impacts at operational level and of measures to minimise impacts Monitoring results Publicly available information on the protection of the identified values Regional, publicly available data from a credible third party
Evidence Reviewed	See evidences reviewed listed at indicators 2.1.1 and 2.1.2, above.
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	• Suppliers Qualification and Control Program, including consultation of information sources regarding biodiversity and procedures for conduct specific field audits to identify and address real and potential threats to conservation of key ecosystems and habitats. • Disqualify material coming from areas where forest management and operations represent evident threats to conservation of key ecosystems and habitats.

	• Promotion of Good Forest Practices • Monitoring plan
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	Indicator
2.2.4	The Biomass Producer has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).
Finding	For better understanding of biodiversity identification see indicator 2.1.1, and for its conservation see indicator 2.1.2. Biodiversity is included in fundamental environmental law in its article 10th (Law 19/2014 14/04) and is fully covered by biodiversity and nature conservation legal framework. In Continental Portugal the protected areas and Natura 2000 sites covers 2.017.803 ha meaning 20.47% of the territory. As on Convention on Biological Diversity: <i>“Portugal’s National Biodiversity Strategic Action Plan NBSAP was based on the following ten guiding principles: an overall higher level of protection; the sustainable use of biological resources; prevention; precaution; recuperation; responsibility; integration; participation; international cooperation and decentralization. The NBSAP then lists 10 fundamental strategies that form the basis of their action plan, which include: to promote scientific research and knowledge of local patrimony; to enhance the National Protected Areas Network; to promote the valorisation of the protected areas, and ensure the conservation of all social, cultural and natural components; ensure conservation and valorisation of areas within the Natura 2000 Network; implement, across the entire national territory, actions specific to the conservation and management of species and habitats of particular interest; integrate conservation and sustainable use principles into national and regional policies and laws; reinforce cooperation between all levels of administration; promote education and formation in conservation fields; ensure public education, awareness and sensitization; and strengthen international cooperation.”</i> <i>(...) About 3,600 species of plants occur in Portugal. There are 69 taxa of terrestrial mammals, a total of 313 bird species, of which around 35% are threatened in some ways, and 17 amphibian and 34 reptile species that occur 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.</i> It is considered that a significant part of biodiversity is covered and detailed by indicators 2.1.1 and 2.1.2, for which low risk was not reached in this risk assessment. All classified habitats, besides priority ones included on HCV, must be included in this indicator.

	Same mitigation measures must be carried out to minimize the specified risks found.
Means of Verification	Best Management Practices Supply contracts Assessment of potential impacts at operational level and of measures to minimise impacts Monitoring results Publicly available information on the protection of the identified values Regional, publicly available data from a credible third party
Evidence Reviewed	Fundamental Environmental Law n.º 19/2014 of 14/04 : http://www.icnf.pt/portal/icnf/legisl/legislacao/2014/lei-n-o-19-2014-de-14-de-abril-d-r-n-o-73-serie-i Dec -Law.nº 142/2008, of 24/07 https://dre.pt/application/file/70698029 Convention on biological diversity: https://www.cbd.int/countries/profile/default.shtml?country=pt#nbsap (see also evidence reviewed at indicators 2.1.1 and 2.1.2)
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	- Suppliers Qualification and Control Program, including consultation of information sources regarding biodiversity and procedures for conduct specific field audits to identify and address real and potential threats to protection of biodiversity. - Disqualify material coming from areas where is confirmed that forest management and operations do not ensure that biodiversity is protected. - Promotion of Good Forest Practices - Monitoring plan

	Indicator
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.
Finding	For soil matters related with residue removal see indicator 2.2.2. In Portugal forest residues removal from forests is regulated so loggers and owners have some legal obligations, related with both fire and phytosanitary policies. These obligations are depending on species, areas, seasons and regions. Depending on silvicultural procedures and forest models, the solutions adopted about forest residues are a) integrating them on soil; b) remove them or c) burn them in

	appropriated season. All of these operations include advantages and disadvantages according to the focus of the overview. In case of removal, it is always considered the harm to the remaining forest, soil, fauna and flora. Process of forest residue removal is commonly included in Best Practices but also in wood supply contracts, and forest land leasing. Based on the available information this indicator is considered low risk
Means of Verification	Best Management Practices; Records of BP's field inspections; Assessment at an operational level of measures designed to minimise impacts on the values identified Level of enforcement of legal framework
Evidence Reviewed	National System for Forest Fire Prevention: https://dre.pt/application/dir/pdf1sdip/2006/06/123A00/45864599.pdf Good Forest Practices http://www.icnf.pt/portal/florestas/gf/documentos-tecnicos/resource/doc/Boas-Praticas-Florestais.pdf Pinus Wilt Disease: •Dec.Retif. n.º 38/2015 de 01/09 •DL 123/15, at 3/07 •DL 95/2011, de 8/08 •DL 154/05 6/09 •Dec. n. 30-A/2011, de 7/10 See also evidences listed on 2.2.2
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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).
Finding	Water legal framework includes water law and national and hydrographical basin plans, being Portuguese Environment Agency the national authority. Other police authorities like SEPNA (National Republican Guard) and Nature Guards and Vigilantes, also have competencies of water resources inspection actions. Generally forest resources have a positive impact on water resources, compared with other land use. Forest management must comply with different regulations, in which REN – National Ecological Reservation is the principal regulation for water and soil questions.

	National Ecological Reservation is a territory classification of sensitive areas for “ecosystem services” where water issues are addressed, and some restrictions are in place to prevent negative impacts in slopes, valleys and other sensible situations. Every forest projects and plans must comply with this regulation, and they are in place, for example in the soil preparation techniques. Major impacts of Portuguese forest on surface water and water downstream are due to forest fires and conversion as seen at 2.1.2 and 2.1.3 indicators above. Other impacts and effects of forest management on water were considered at: - Clearcuttings methods above a certain size; - Erosion and desertification problems. So, it is considered a specified risk for water impacts the exploitation by clear cutting at dimensions above to the maximum area indicated for each region by PROF Regional Forestry Management Plan. This risk is applied to all private, communitarian, and public forest areas which are not managed by ICNF. All the other situations are considered low risk according to the available information.
Means of Verification	Internet research GIS maps of HCV areas Regional, publicly available data from a credible third party as FSC and PEFC reports Forest Management plan as PGF, PUB, PEIF Game management plans Regional Forest Plans Forest Best Management Practices Forest Operating Procedures Records of BPs’ field inspections Monitoring records Publicly available information on the protection of the values identified Historical maps and enquiries with stakeholders Aerial photos Approved EIA when applicable. Records of oil and hazardous chemicals deliveries. Assessment at an operational level of measures designed to minimise impacts on the values identified Erosion and desertification programs and maps
Evidence Reviewed	Water Law: Dec-Law n.º 130/2012 22/06 https://dre.pt/application/dir/pdf1sdip/2012/06/12000/0310903139.pdf National Water Plan:

	http://www.apambiente.pt/?ref=16&subref=7&sub2ref=9&sub3ref=833 Hydrographical basin Plans http://www.apambiente.pt/?ref=16&subref=7&sub2ref=9&sub3ref=834#pgbh-tabela Reserva Ecológica Nacional Law: https://dre.pt/application/dir/pdf1sdip/2012/11/21200/0630806346.pdf See also evidences listed on indicators 2.1.1, 2.1.2, 2.1.3, 2.2.1 and 2.2.2
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	• Suppliers Qualification and Control Program, including consultation of information sources and legislation related with water, and procedures for conduct field audits to verify if forest management maintains or improves soil quality, especially in case of clear cuttings at dimensions above to the maximum area indicated for each region by PROF (Regional Forestry Management Plan), in areas which are not managed by ICNF. • Disqualify material coming from areas where is confirmed that forest management do not minimise negative impacts on ground water, surface water and water downstream. • Promotion of Good Forest Practices • Monitoring plan

	Indicator
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.
Finding	Air legal framework includes air law and national air quality plan, being Portuguese Environment Agency the national authority. Other police authorities like SEPNA (National Republican Guard) and Nature Guards and Vigilantes, also have competencies of air pollution inspection actions. Generally, forests are considered the best use of soil compared with other land use possibilities and forest management activities are not known in the country as to cause air pollution. Major negative impacts from forests are due to forest fires which are not considered management activities. Burning forest residues at the forest site as the traditional way is prevented with forest feedstock sourcing for biomass.

	Forest equipment must comply with EU directives on air pollution. Based on available information the requirements included in this indicator are considered low risk.
Means of Verification	Forest Best Management Practices Supply contracts Records of BPs' field inspections Assessment at an operational level of measures designed to minimise impacts on the values identified Publicly available information on the protection of air quality as APA website. Regional, publicly available data from a credible third party The existence of a strong legal framework in the region
Evidence Reviewed	• Environmental Laws : Law n.º 19/14 de 14/04 artº10ºd) DL nº49/05, de 24/02 artº20º • DL 197/2005, de 8/11 artº 1º, nº3 b) e nº4, Decree-Law n.º 102/2010 of 23/09 https://dre.pt/application/dir/pdf1sdip/2010/09/18600/0417704205.pdf Machinery • NP 1948, de 1994 • NP 2761, de 1988 • NP EN 13525:2005+A2:2009
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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).
Finding	The legal framework for agrochemicals use is based on a recent law which applies to Portuguese context the EU Directive n.º 2009/128/CE, of 21/10. Fertilisers are prescribed on some forest management systems like installation period or forest plantations, but the intensity of this use is very low according to every perspective.

	The implementation of this law had a very positive impact on use of agrochemicals, and included the need of accredited training, and records (quantities, disposals, etc) to all the involved people. The use of chemicals on Portuguese forests is not common and it is very restricted in few cases because, among others, there are few homologate products applying to the most important phytosanitary forest plagues and diseases. In this exceptional cases are pine processionary (<i>Thaumetopoea pityocampa</i>) and the eucalyptus snout beetle (<i>Gonipterus platensis</i>), but in both cases there are also other biologic and genetic measures. Based on available information the requirements included in this indicator are considered low risk.
Means of Verification	Existing legislation; Level of enforcement; Assessment at an operational level of measures designed to minimize impacts on the values identified; Monitoring records; Interviews with staff. Records of chemicals deliveries
Evidence Reviewed	Law n.º 26/2013 de 11 /04: https://dre.pt/application/file/260367 Pine processionary official Plan: http://www.icnf.pt/portal/florestas/prag-doe/resource/doc/proc/proc-florest-2015.pdf Eucalyptus snout beetle official plan: http://www.icnf.pt/portal/florestas/prag-doe/ag-bn/gorg-eucal
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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).
Finding	The legal framework for waste disposal is based on a recent law which applies to Portuguese context the EU Directive n.º 2008/98/CE. Portuguese Environment Agency is the national authority but other police authorities like SEPNA (National Republican Guard) and Nature Guards and Vigilantes, also have

	competencies in waste disposal. Also municipal authorities can apply municipal rules to implement applicable legislation. Waste disposal on forest lands exists in Portugal and it affects both private and public lands. But as it is illegal in the country there are efforts made by private owners and authorities to collect the waste and send it to final legal destination. Some of the measures used by owners include fencing of their lands, sign installation against waste disposal and formalizing complaints to authorities in case of illegal waste disposal. Based on available information the requirements included in this indicator are considered low risk
Means of Verification	Existing legislation; Level of enforcement; Regional Best Management Practices
Evidence Reviewed	Waste Management and Planning Official page: https://www.apambiente.pt/index.php?ref=16&subref=84 Decree-Law n.º 73/2011 de 17/06: https://www.apambiente.pt/zdata/Politicar/Residuos/DL_73_2011_DQR.pdf Waste National Management Plan: file:///C:/Users/imobi_000/Downloads/Projeto_PNGR_2011-2020.pdf European Waste Statistical: http://ec.europa.eu/eurostat/statistics-explained/index.php/Waste_statistics/pt
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	Statistical information on National Forest Inventory is fully available from IFN5 (2005) and preliminary results from IFN6 (2010). Preliminary results from IFN6 (2010) for main species in pellet production show that: Total forest area in Mainland Portugal is 3,154,800 ha of which 2,972,356 ha correspond to the forested area.

- *Eucalyptus* plantations are larger Portuguese forests. Forest cover with *Eucalyptus* has increased of 13% from 1995 to 2010 (over 90,000 ha in the period to a total surface of 812,000 ha in 2010; 755,355 ha on forested areas) mostly on areas converted from *Pinus pinaster* (70,000 ha in the period). *Pinus* Wilt Disease/Nemátodo-do-pinheiro pest, fires and economic motivations can be behind it.
- *Pinus pinaster* forests have decreased significantly from 1995 to 2010: of 27% on total surface (263,000 ha in the period to a total surface of 713,000 ha in 2010; 624,248 ha on forested areas). 163,000 ha was converted to open land, mostly related to *Pinus* Wilt Disease/Nemátodo-do-pinheiro pest and fires and 70,000 ha to *Eucalyptus* plantations, which can also include economic motivations. Represents the majority of inputs in BP feedstock.
- *Pinus pinea* forests have increased significantly from 1995 and 2010: 54% (over 55,000 ha in the period to a total surface of 175,000 ha in 2010; 173,716 ha on forested areas). This species is planted primarily for harvesting of pine nuts and protective land use. Has impact on feedstock in southern pellet plants. It is not subject to harvest for round wood production so feedstock comes as a result of silvicultural works. This species has good biomass percentage in relation to its volume as a result of branches.

Analysing statistical information available for average annual growth (AMA) from IFN5 (2005) show for Mainland Portugal:

- On *Eucalyptus* an average annual growth of 4,375,000 m³/year based on 2005 inventory data. Currently the value will be significantly higher. *Eucalyptus* wood from Portugal consumption in 2014 was 5,400,000 m³ (CELPA data). *Eucalyptus* is fast growing species, over 12 years, with one and only cut on the period: final clear cut. So harvesting does not compromise long-term production of the forest.
- On *Pinus pinaster* an average annual growth of 3,650,000 m³/year based on 2005 inventory data. Currently the value will be lower. *Pinus pinaster* wood from Portugal harvested in 2014 was 2,247,000 m³ (Centro Pinus data). So *Pinus pinaster* wood available from Portugal in under AMA.

On the analysis it is relevant also to take into account that:

1. *Pinus* Wilt Disease/Nemátodo-da-madeira-do-pinheiro pest have affected significantly to *Pinus pinaster*.
2. Fires continue to be a relevant problem in Portugal.
3. Data from CentroPinus states that pine wood consumption of timber industry in 2014 was 4,360,000 m³, with a relevant data a 1,400,000 m³ for pellets, 32% of total. Also 32% of pine wood used by CentroPinus partners was imported in 2014. Percentage of imported pine wood used in 2006 was 3%. So lack of pine wood from Portugal is being covered with importations, mainly from Spain.
4. Data from CELPA states that *Eucalyptus* consumption of pulp and paper industry in 2014 was 7,800,000 m³ (4,980,000 m³ in 2005), of which 2,415,000 m³ were imported, mainly from Spain.

So all above information shows that actual harvesting volume does not exceed sustainable values and compromises long-term economic viability of stands. Thus the risk for this indicator has been assessed as Low.

Means of Verification	Volume and growth data and yield calculations, and Operational Practice indicate that biomass feedstock harvesting rates avoid significant negative impacts on forest productivity and long-term economic viability.
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Estatísticas Agrícolas 2015.xls, Instituto Nacional Estatística (https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=271434407&PUBLICACOESmodo=2) Inventario Florestal Nacional IFN5 (FloreStat_IFN5); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn5/rel-fin) Inventario Florestal Nacional IFN6, preliminary results (IFN6 - Resultados preliminares.pdf); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn6) Boletim-Estatístico-da-Celpa-de-2014 (http://www.celpa.pt/wp-content/uploads/2016/09/Boletim_WEB_2015.pdf) Relatório-de-Characterização-da-Fileira-Florestal-2014 (http://www.aiff.org.pt/assets/Relatorio-de-Characterizacao-da-Fileira-Florestal-2014-160p-CAPA-3-spread....pdf) Fileira do Pinho: desafios e oportunidades (centroPINUS_JoaoGonçalves dados fileira pinho 2014.pdf); Centro Pinus (http://www.centropinus.org/index.php?lingua=1) Decreto lei 16-2009 planos gestão florestal (https://dre.pt/application/dir/pdf1sdip/2009/01/00900/0026800273.pdf); ICNF portal (http://www.icnf.pt/portal/icnf/legisl/legislacao/2009/decreto-lei-n.o-16-2009-de-14-de-janeiro.-d.r.-n.o-9-serie-i) Normas Técnicas Planos Gestão Florestal, ICNF portal (http://www.icnf.pt/portal/florestas/gf/pgf/resource/doc/manual/normas-tecn-PGF-AFN.pdf)
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
2.3.2	Adequate training is provided for all personnel, including employees and contractors (CPET S6d).
Finding	National Strategy of Forests states that focus on the professionalization and training of the different actors in the forestry sector will be of key importance for increasing the competitiveness and development of the sector. The discussion of this aspect with the partners for the establishment of a training program will be one of the pillars for the development of knowledge and skills. ICNF, governmental institution develops trainings related to forest since training of forest operators to more technical issues regarding inspectors, forest managers, foresters,.. Operations Center and Forest Techniques (COTF) is a center 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, use and maintenance of machinery and equipment, and the methods and techniques used, always giving due and necessary attention compliance with the safety, hygiene and health at work. It is operative since 1984 and every year provides training to forest enterprises, ICNF staff, inspectors and divulgation activities (schools and others). Relevant in training at the forest level are also the Organizations of Forest Producers (OPF) mainly from Municipalities from North and Center Portugal and also many courses by private entities over the country. Portugal is a country with an old tradition in forests activities. University education is provided on the technical side with several colleges in the country. There are specific courses for field machinery operators but it is planned to be updated on the National Catalog of Formations a new training on Forestry Machinery Technician not yet available. Under this information taking into account strong forest tradition in the country and the presence of access to adequate levels of training the risk on the indicator is assessed as low.
Means of Verification	Existing legislation Level of enforcement Training course curricula Records of BPs' field inspections Training records Interviews with staff Training plans, training records, and records of qualifications
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Centro de Operações e Técnicas Florestais (COTF) - Segurança e Saúde, ICNF portal (http://www.icnf.pt/portal/florestas/gf/cotf); (http://www.icnf.pt/portal/florestas/gf/cotf/o-g-e); (http://www.icnf.pt/portal/florestas/gf/cotf/formacao) Catalogo Nacional de Formações (http://www.catalogo.anqep.gov.pt/PDF/QualificacaoReferencialPDF/1065/CA/duplacertificacao/623314_RefCA) http://www.catalogo.anqep.gov.pt/boDocumentos/getDocumentos/522
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

Indicator

2.3.3	Analysis shows that feedstock harvesting and biomass production positively contribute to the local economy, including employment.
Finding	Statistic shown that value added of forest production in Portugal is 1,193million euro (M€) in 2014, with a sustained growth over last years. Also 2014 forestry goods production have an estimation of 878.25 M€ of which wood for energy is 55.38 M€ (6%). Data from INE 2012 states that 91% of Portuguese forest sector enterprises have from 1 to 10 workers. Forest industries employ 78,000 people (12% of all Portuguese processing industry, 1.7% of Portuguese employed population) of which 10,600 work on logging companies and 20,800 on wood industry. Also annual turnover of forest sector industries was in 2012 over 7,392 M€(2,497.6 M€ wood and furniture industry, 1,320.4 M€ cork industry and 3,574.6 M€ pulp and paper industry), representing 10% of all Portuguese processing industry. Despite the recent crisis, the forest sector has maintained its contribution, in macroeconomic terms, in terms of added value. Biomass/Feedstock with origin in Portuguese forest is supplied through domestic supply chains to BP's so economic impact related to feedstock chain from the forest, transportation, processing and BP is local. Also it is mainly complementary with other wood industries as use on their processes low quality wood (which previously it was not exploited or it was burned) or wastes from industrial processes. With all of these considerations we can conclude that biomass production contributes positively to local economy and thus the indicator has been assessed as low.
Means of Verification	Data analysis
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Estatísticas Agrícolas 2015.xls, Instituto Nacional Estatística (https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_bo ui=271434407&PUBLICACOESmodo=2) Relatório-de-Characterização-da-Fileira-Florestal-2014 (http://www.aiff.org.pt/assets/Relatorio-de-Characterizacao-da-Fileira-Florestal-2014-160p-CAPA-3-spread....pdf) Fileira do Pinho: desafios e oportunidades (centroPINUS_JoaoGoncalves dados fileira pinho 2014.pdf); Centro Pinus (http://www.centropinus.org/index.php?lingua=1)
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

Indicator

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).
Finding	For a long time have been identified some health problems in the forest in Portugal, some of them associated with perturbations occurring in forest ecosystems caused by various biotic and abiotic factors and others associated with the type of forest management which has been implemented as it is stated in the National Forest Strategy (2015). Health and vitality of Portuguese forest ecosystem have become a serious problem especially because of pests and diseases. Statistics from IFN5 (last complete inventory data available) shows that percentage of heavy damaged trees have increased from 1995 to 2005: • Pinus pinaster. From 7% of trees with heavy damage in 1995 to 11% in 2005. • Pinus pinea. From 2% to 7%. • Eucalyptus. From 4% to 11% Lists of pests and diseases that actually affect significantly to Portuguese forests are: Cork Oak “Montados” decline, Pinus Wilt Disease/nemátodo da madeira do pinheiro (NMP) in <i>Pinus pinaster</i>, gorgulho do eucalipto (<i>Gonipterus platensis</i>) in <i>Eucalyptus</i>, o sugador das pinhas (<i>Leptoglossus occidentalis</i>) in <i>Pinus pinea</i>, cancro resinoso do pinheiro (<i>Fusarium circinatum</i>) in <i>Pinus</i> and other coniferous,... From 2005 NMP pest and others have affected strongly to Portuguese forests so actual values will be higher than this. In order to face the situation Portuguese Government has approved the Operational Program of Forest Health which applies solely to Mainland Portugal and has a generic diagnosis of the current situation in terms of phytosanitary protection, defining the entities with responsibilities in the implementation of measures and actions to prevent and control. Four National Action/Control Plans were developed for each one of the most relevant pests: Pinus Wilt Disease/nemátodo da madeira do pinheiro (NMP) in <i>Pinus pinaster</i>, gorgulho do eucalipto (<i>Gonipterus platensis</i>) in <i>Eucalyptus</i>, o sugador das pinhas (<i>Leptoglossus occidentalis</i>) in <i>Pinus pinea</i>, cancro resinoso do pinheiro (<i>Fusarium circinatum</i>) in <i>Pinus</i> and other coniferous. In affection to health and vitality of forests there are also mentioned: • Abandonment of management • Continuous monocultures of one species (especially <i>Eucalyptus</i> plantations) • Invasive species. As an example it is stated that from last inventory records (IFN6) the area of <i>Acacia</i> has duplicated from 1995 to 2010 • Fires. The increase of forest fires in comparison with the previous decades represents the actual greatest perceived risks in the Portuguese forest sector. Availed in the next indicator

	These biotic and abiotic risks are supported by disturbances affect in 2011 24% of the forest area, generated by a regressive vicious cycle that combines fire, “seca”, pests, diseases and invasive species. Thus while it seems clear that Portuguese government has taken steps to address the problem, with actual information available this indicator needs to be assessed as specified risk for health and vitality of forests ecosystems.
Means of Verification	Overall evaluation of potential impacts of operations on forest ecosystem health and vitality Assessment of potential impacts at operational level and of measures to minimise impacts Regional Best Management Practices Supply contracts Monitoring results. Experts consultation
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) UNECE, Forest Europe report 2011 (https://www.unece.org/fileadmin/DAM/publications/timber/Forest_Europe_report_2011_web.pdf) Programa Operacional de Sanidade Florestal, ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/posf) Fitossanidade florestal. Divulgação e informação, ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/divulg) Programas de Monitorização e Controlo de Pragas e Doenças, ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/resource/img/apr-progr-monit-c-pragas-e-d/view) Medias Controlo Nemátodo-da-Madeira-do-Pinheiro_03_2015, ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/resource/doc/divul/apresentacoes/2015-03-12/NMP_03_2015.pdf) Inventario Florestal Nacional IFN5 (FloreStat_IFN5); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn5/rel-fin) Inventario Florestal Nacional IFN6, preliminary results (IFN6 - Resultados preliminares.pdf); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn6) Relatório-de-Characterização-da-Fileira-Florestal-2014 (http://www.aiff.org.pt/assets/Relatorio-de-Characterizacao-da-Fileira-Florestal-2014-160p-CAPA-3-spread....pdf) Quercus NGO Manifesto da Quercus pelas florestas (http://www.quercus.pt/documentos-floresta/2955-manifesto-da-quercus-pela-florestas)
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	Suppliers Qualification and Control Program, including consultation of information sources regarding biotic and abiotic risks for the ecosystems services, procedures to access information from the area regarding biotic and abiotic risks, and procedures for conduct monitoring field audits to verify ecosystems services, social and environmental aspects and the appropriate assessment, planning and implementation of measures for minimise real or potential risks and impacts.

	• Disqualify material coming from areas where health, vitality and other services provided by forest ecosystems are not maintained or improved; • Promotion of Good Forest Practices • Monitoring plan
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	Indicator
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).
Finding	Pests, diseases and fires are today the greatest perceived risks in the Portuguese forest sector. As stated in previous indicator biotic and abiotic risks are supported by disturbances affect in 2011 24% of the forest area, generated by a regressive vicious cycle that combines fire, “seca”, pests, diseases and invasive species. <u>Regarding pests and diseases</u> although affection is serious (see indicator 2.4.1) Portuguese Government has approved the Operational Program of Forest Health which has a diagnosis of the current situation in terms of phytosanitary protection, defining the entities with responsibilities in the implementation of measures and actions to prevent and control. Four National Action/Control Plans were developed for each one of most relevant pests: Pinus Wilt Disease/nemátodo da madeira do pinheiro (NMP) in <i>Pinus pinaster</i>, gorgulho do eucalipto (<i>Gonipterus platensis</i>) in <i>Eucalyptus</i>, o sugador das pinhas (<i>Leptoglossus occidentalis</i>) in <i>Pinus pinea</i>, cancro resinoso do pinheiro (<i>Fusarium circinatum</i>) in Pinus and other coniferous. In the case of NMP extensive legislation and information is available. There are enforcement and monitoring on the performance of the several actors: loggers, transporters, warehouses, industrial facilities. Every step need of official document. Therefore vigorous measures have been taken to address the problems and regarding pest and diseases risk is assessed as low. <u>Regarding fires</u> in the UNECE report (2011) Portugal figure as the European country with the highest percentage of forest area burned 3% / year. The impacts of fires are indisputable considering Forestry Authority "Forest fires are one of the risk factors in the preservation and conservation of nature and biodiversity, an important element conditioning the evolution of habitats and natural vegetation "ICNF 2014.

	A comprehensive analysis for the period 2003-2013 the analysis reveals high concern figures: total burned area of 1,573,940 ha, in which about 51% are forest stands (800,470 ha), an average of 22,777 events / year, of which 95.1% are associated with human action (negligence or intentional). The national program for forest fire protection (PNDFCI) establishes various levels (national, regional, municipal and local) in order to create a network of forest fire prevention (primary and secondary on public level and tertiary on forest owner level). This system aims to compartmentalize extensive woodlands and contribute to the containment and firefighting. The identification of these elements is defined in the various plans in force particularly in the Forestry Management Regional Plans (PROF) and Forest Defense Municipal Plans Against Fires (PMDFCI), which also define the responsibilities for its implementation on field. In terms of forest owners are defined in Forest Management Plans and related (PEIF, PUB). Private forest lands can be grouped into Forest Intervention Areas (ZIFs), forest policy instrument to ensure efficient management of forests at the landscape scale and the consistent application of public support for forestry development. ZIFs are continuous land area, with a majority of forest areas, subject to a Forest Management Plan and a Defense Plan for Forest and managed by a single entity. Until July 2016 they are constituted 179 ZIF, covering 924,447 hectares of territory. One of the objectives of ZIFs is to reduce the conditions of ignition and fire spread implementing on the field planned measures. Field implementation of planned measures is uneven in Portugal. Also fires are the greatest perceived risks in the Portuguese forest sector as it recognized by public administration. On the above information specified risk is assessed on the fire management at forest level.
Means of Verification	Regional Best Management Practices Supply contracts Assessment of potential impacts at operational level and of measures to minimise impacts Monitoring results Regional, publicly available data from a credible third party The existence of a strong legal framework in the region Expert consultation
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Programa Operacional de Sanidade Florestal, ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/posf)

	Fitossanidade florestal. Divulgação e informação, ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/divulg) Programas de Monitorização e Controlo de Pragas e Doenças, ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/resource/img/apr-progr-monit-c-pragas-e-d/view) Medias Controlo Nemátodo-da-Madeira-do-Pinheiro_03_2015, ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/resource/doc/divul/apresentacoes/2015-03-12/NMP_03_2015.pdf) Decreto lei 123-2015 nematodo do Pinheiro (https://dre.pt/application/file/67649256); ICNF portal (http://www.icnf.pt/portal/florestas/prag-doe/ag-bn/nmp) Declaração Retificação n.º 38/2015 de 01/09 (https://dre.pt/application/file/70144398) Inventario Florestal Nacional IFN5 (FloreStat_IFN5); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn5/rel-fin) Inventario Florestal Nacional IFN6, preliminary results (IFN6 - Resultados preliminares.pdf); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn6) Plano Nacional de Defesa da Floresta Contra Incêndios (https://dre.pt/application/dir/pdf1sdip/2006/05/102B00/35113559.pdf); ICNF portal (http://www.icnf.pt/portal/florestas/dfci/planos/PNDFCI) Zonas de Intervenção Florestal, ICNF portal (http://www.icnf.pt/portal/florestas/gf/zif/sit-ger-inf) Relatório-de-Characterização-da-Fileira-Florestal-2014 (http://www.aiff.org.pt/assets/Relatorio-de-Characterizacao-da-Fileira-Florestal-2014-160p-CAPA-3-spread....pdf)
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	• Suppliers Qualification and Control Program, including consultation of information sources and legislation regarding natural processes (fires, pests, invasive species, and diseases), procedures to access information from the area regarding invasive species, diseases, resources for fire prevention and protection, and procedures for conduct field audits to verify these aspects if necessary. • Disqualify material coming from areas where natural processes, such as fires, pests and diseases, are not managed appropriately. • Promotion of Good Forest Practices • Monitoring plan

	Indicator
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).

Finding	Unauthorized activities such as illegal logging, mining and encroachment are not a significant problem in Portugal. There are low scale problems as illegal littering, loose dogs, unauthorized sports, theft of firewood, wood or fruits, poaching. Illegal or unauthorised activities in Portuguese forests generally have limited economic or biological impact. There are also some problems related to Conversion which can be catalogued under unauthorized activities but they are described in its corresponding indicator (2.1.3). The indicator has been assessed as low.
Means of Verification	Records of BPs' field inspections Monitoring records Interviews with staff Interviews with stakeholders Publicly available information (News and media)
Evidence Reviewed	ILLEGAL LOGGING PORTAL, Portugal (http://www.illegal-logging.info/regions/portugal) Transparency international, corruption perception index Portugal (https://www.transparency.org/country/#PRT)
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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).
Finding	There are no indigenous people in the country since Portuguese are native in their homeland. Also there are no national minorities that need special protection. 97% of Portuguese forests are private. Approximated number of private owners in Portugal is over 500,000 people (5% of Portuguese population and 12.5% of families; so one in eight Portuguese people have familiar links to forest properties). 8% of private forest are under communitarian management (Baldios) based in old customary and traditional tenure and rights and regulated by specific law. As most of the country forest is under private property civil code is applied which includes the following rights: - to use; - to transform; - to exclude and defend including the rights to delimitation, prohibition and defense.

	- to return and compensation; - to sale. These rights are applied to the most part of forest resources and to all of the wood resources. The customary rights include the right to entry inside forest properties, and even the recollection of private natural resources of free use like mushrooms or aromatic plants. This customary right does not include licensed fenced properties for cattle or large game hunting zones. Car circulation is limited to public use roads and/or public domain waters and other specific situations. Over the years, legislation about private things of free use became regulated and some of them of private use. Several situations may happen, for example the pine cones were of free use until forty years ago when it became private. Another example is the game hunting which is still a public thing but private entities can pay for a hunting concession to manage it. The rights of recollection of mushrooms, aromatic and medicinal plants still have a lack in legislation as 2009 Forest Code was revoked on 2012. This Code was giving more rights for these natural resources to land owners. Conflicts may exist between land owners rights based on the private things defense against the customary rights of accessing and free use recollection, as no specific legislation was updated about this issue. These conflicts may become more relevant where resources are easy to steal, like pine cones or other NTFP-Non Timber Forest Products. In the ground situations of use and abuse of fences and inadequate signs are common, including closed gates. In those situations, it is believed that customary rights are not respected, and there is a specified risk on this indicator. This specified risk doesn't include the licensed cattle parks or big game hunting areas. In the rest of situations, where the properties are not fenced, or being fenced they have ways to pass, the risk is assessed as low.
Means of Verification	Customary use rights are identified and documented Interviews with local communities and other stakeholders, indicate that their rights are being respected Appropriate mechanisms exist to resolve disputes Agreements exist regarding these rights
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Lei nº 68-93 Baldios (http://www.proder.pt/ResourcesUser/Legisla%C3%A7%C3%A3o/Nacional/Lein%C2%BA68-93.pdf)

	Coelho, I.S. (2003) Propriedade da Terra e Política Florestal em Portugal (http://www.scielo.mec.pt/pdf/slu/v11n2/v11n2a05.pdf) Dec-Law n.º 254/2009 of 24/09 (http://www.proder.pt/ResourcesUser/Legisla%C3%A7%C3%A3o/Nacional/Decreto-Lei%C2%BA254-2009.pdf) Law n.º 12/2012 of 13/03 (https://dre.pt/application/dir/pdf1sdip/2012/03/05200/0110301103.pdf) Port. n.o 247/2001 of 22/03 (https://dre.pt/application/dir/pdf1sdip/2001/03/069B00/16111612.pdf)
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	- Suppliers Qualification and Control Program, including procedures to access information from the area regarding use and abuse of fences and inadequate signs and closed gates, and procedures for conduct field audits to verify these aspects if necessary. - Disqualify material coming from areas where is confirmed the use and abuse of fences and inadequate signs and closed gates in a way that customary rights are not respected (except in case of licensed cattle parks or big game hunting areas). - Promotion of Good Forest Practices - Monitoring plan

	Indicator
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.
Finding	Subsistence needs for local communities are assessed as being not applicable for Portugal. Based on the above, it is concluded that there is a low risk of non-compliance with the requirement
Means of Verification	
Evidence Reviewed	
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
2.6.1	The Biomass Producer has implemented appropriate control systems and procedures for verifying that 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.
Finding	Grievances and disputes, including those relating to tenure and use rights, forest management practices and work conditions in Portugal are regulated by laws. Legal framework includes the Portuguese Constitution, the Labour Code and other specific regulations. The detailed procedures, duties and responsibilities of involved persons are defined in both legislation and other legal regulations. Legislation and justice system provides a route for appeal should people or companies be dissatisfied with the outcome of the dispute resolution process. Land tenure and use rights are object of Civil Code, being land tenure included on private property rights on Constitution article 62th. These rights include communitarian forests and also Forest Renting/leasing contracts. Disputes about forest management practices would involve forest authorities ICNF on both public and private forests. Specific forest management practices should be included on renting and forest services contracts as harvesting contracts. The disputes related to work conditions shall be resolved according to administrative procedures and labour legislation. Trade unions may help in disputes over work conditions. Based on the reviewed evidence it is concluded that there is a low risk of non-compliance with the requirement.
Means of Verification	Existing legal systems Level of enforcement Forest Best Management Practices Renting and harvesting contracts
Evidence Reviewed	Labour Code: • Law n.º 7/09 12/02 (http://www.act.gov.pt/(pt-PT)/Legislacao/Codigodotrabalhoatualizado/Paginas/default.aspx) Portuguese Constitution

	Civil Code: http://www.pgdlisboa.pt/leis/lei_mostra_articulado.php?nid=775&tabela=leis
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	Portugal has signed the ILO fundamental conventions, which includes 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. This right is included on Portuguese constitution on article 56. Most part of working activities is covered by an annual working collective convention, which includes the forest sector. International Trade Union Confederation (IUTC) ranks 139 countries against 97 internationally recognised indicators to assess where workers' rights are best protected, in law and in practice. Portugal has a rating of 3, from 1 to 5+, in the ITUC Global Rights Index 2014. This score is given for countries where: (There are) "Regular violation 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." Authority directly involved on employment rights and conditions is Work Conditions Authority (ACT) but for many reasons other authorities are related to the issue, as Immigration and Borders Services (SEF) social security services or even tax services. All of them can make inspections to different issues related to work, with the joining of policies authorities as GNR-Republican National Guard and PSP-Public Security Police. ACT has strategic Plans for Agriculture and Forest activities and also does integrated inspections with Spanish authorities for agriculture and forestry activities. Recently one notice state that ACT bought a drone to help agriculture and forestry inspections. Inspective activities of ACT and SEF result on penalties or suspensions when illegal situations are found. It wasn't found law violations identified on the right of freedom of association and collective bargaining in Portuguese forest sector.

	According to the available information this indicator is classified as low risk.
Means of Verification	Legislation Level of enforcement Portuguese constitution Regional, publicly available data from a credible third party Publicly available information (News and media)
Evidence Reviewed	Agriculture, Food and Forest Union: http://www.setaa.pt/index.php/Geral/ Boletim do Trabalho e Emprego: http://bte.gep.msess.gov.pt/ ; http://bte.gep.msess.gov.pt/completos/2016/bte4_2016.pdf WWW.ILO: http://www.ilo.org/dyn/normlex/en/f?p=1000:13100:0::NO::P13100_COMMENT_ID,P13100_LANG_CODE:3253858,en:NO Overview of ILO convention ratifications by Portugal: http://www.ilo.org/public/portugue/region/eurpro/lisbon/html/portugal_convencoes_numero_pt.htm ITUC Global RIGhTs Index The woRld's woRst CoUnTRles foR workers: http://www.ituc-csi.org/IMG/pdf/survey_ra_2014_eng_v2.pdf Labor Code• Law n.º 7/09 12/02 and updates like L69/13, de 30/08 includes collective convention http://www.act.gov.pt/(pt-PT)/Legislacao/Codigodotrabalhoatualizado/Paginas/default.aspx Portuguese Constitution Government sources: SEF Statistical Annual reports: http://sefstat.sef.pt/relatorios.aspx SEF Inspective news about forest sector: http://www.sef.pt/portal/v10/PT/asp/noticias/Noticias_Detalhe.aspx?id_linha=7018 http://www.sef.pt/portal/v10/PT/asp/noticias/Noticias_Detalhe.aspx?id_linha=6802 ACT Annual Reports: http://www.act.gov.pt/(pt-PT)/SobreACT/DocumentosOrientadores/RelatorioActividades/Paginas/default.aspx News about ACT inspective work including forest: http://www.act.gov.pt/(pt-PT)/Itens/Noticias/Paginas/ACTeInspe%C3%A7%C3%A3odoTrabalhodeEspanhaema%C3%A7%C3%B5esconjuntas.aspx http://sol.sapo.pt/artigo/500544/utilizacao-de-drones-pela-inspeccao-geral-do-trabalho-gera-polemica ACT Strategic Plan for Agriculture and Forestry Activities:

	http://www.act.gov.pt/(pt-PT)/Campanhas/Campanhasrealizadas/Trabalho_Agricola_Florestal/Documents/Relat%C3%B3rio%20-%20Plano%20a%C3%A7%C3%A3o%20setor%20agr%C3%ADcola%20e%20florestal.pdf		
Risk Rating	☒ Low Risk	☐ Specified Risk	☐ Unspecified Risk at RA

	Indicator
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.
Finding	Portugal has ratified the convention against forced labour (nº29) in 1956. Portuguese legislation is applied against any form of compulsory labour in accordance with Article 160 of the Criminal Code, one who offers, gives, servicemen, calls accepts, transports, harbours or receives a person for the purpose of exploitation, including sexual exploitation, labour exploitation, begging, slavery, harvest organs or other exploitation by criminal activities and he / she has abused the authority resulting from a hierarchical relationship of dependency (whether financial, family or work related) is punished with imprisonment of three to ten years. Source: § (Article 160 of Decree-Law No. 400/82 Penal Code amended by Law No. 59/2007 and Law No. 60/2013) International Trade Union Confederation (IUTC) ranks 139 countries against 97 internationally recognised indicators to assess where workers' rights are best protected, in law and in practice. Portugal has a rating of 3, from 1 to 5+, in the ITUC Global Rights Index 2014. This score is given for countries where: (There are) "Regular violation 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." Some cases of compulsory labour were found on agriculture activities on recent years, and same data is available about those cases on Observatory on Traffic in Human Beings Reports. Authority directly involved on employment rights and conditions is Work Conditions Authority (ACT) but for many reasons other authorities are related to the issue, as Immigration and Borders Services (SEF) social security services or even tax services. All of them can make inspections to different issues related to work, with the joining of policies authorities as GNR-Republican National Guard and PSP-Public Security Police. ACT has strategic Plans for Agriculture and Forest activities and also does integrated inspections with Spanish authorities for agriculture and forestry activities. Recently one notice state that ACT bought a drone to help agriculture and forestry inspections.

	Inspective activities of ACT and SEF result on penalties or suspensions when illegal situations are found. Nevertheless, in forestry there wasn't found any evidence confirming the existence of risks of compulsory and/or forced labour in Portugal. According to the available information this indicator is classified as low risk.
Means of Verification	Legislation Level of enforcement Regional, publicly available data from a credible third party Publicly available information (News and media)
Evidence Reviewed	III National Plan to Prevent and Combat Trafficking in Human Beings 2014-2017 at http://www.igualdade.gov.pt/images/stories/documentos/legislacao/legislacao/Planos_Nacionais/2014-2017-iii-pnpc-tsh-en.pdf Observatory on Traffic in Human Beings: http://www.otsh.mai.gov.pt/Recursos/Pages/default.aspx Reports of Observatory on Traffic in Human Beings: 2015 ; 2014 ; 2013; 2012 ; 2011 Overview of ILO convention ratifications by Portugal: http://www.ilo.org/public/portugue/region/eurpro/lisbon/html/portugal_convencoes_numero_pt.htm ITUC Global RIGhTs Index The woRld's woRsT CoUnTRies foR workers: http://www.ituc-csi.org/IMG/pdf/survey_ra_2014_eng_v2.pdf Government sources: SEF Statistical Annual reports: http://sefstat.sef.pt/relatorios.aspx SEF Inspective news about forest sector: http://www.sef.pt/portal/v10/PT/asp/Noticias/Noticias_Detalhe.aspx?id_linha=7018 http://www.sef.pt/portal/v10/PT/asp/Noticias/Noticias_Detalhe.aspx?id_linha=6802 ACT Annual Reports: http://www.act.gov.pt/(pt-PT)/SobreACT/DocumentosOrientadores/RelatorioActividades/Paginas/default.aspx News about ACT inspective work including forest: http://www.act.gov.pt/(pt-PT)/Itens/Noticias/Paginas/ACTeInspe%C3%A7%C3%A3odoTrabalhodeEspanhaema%C3%A7%C3%B5esconjuntas.aspx http://sol.sapo.pt/artigo/500544/utilizacao-de-drones-pela-inspeccao-geral-do-trabalho-gera-polemica ACT Strategic Plan for Agriculture and Forestry Activities: http://www.act.gov.pt/(pt-PT)/Campanhas/Campanhasrealizadas/Trabalho_Agricola_Florestal/Documents/Relat%C3%B3rio%20-%20Plano%20a%C3%A7%C3%A3o%20setor%20agr%C3%ADcola%20e%20florestal.pdf

Risk Rating	☒ Low Risk	☐ Specified Risk	☐ Unspecified Risk at RA
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	Indicator
2.7.3	The Biomass Producer has implemented appropriate control systems and procedures to verify that feedstock is not supplied using child labour.
Finding	In Portugal the minimum age for employment is 16 years. A minor of 16-year-old can't be used to carry out a paid activity delivered with autonomy unless he / she has completed compulsory education or is enrolled and attending secondary education, and is a work light. This light work should consist of simple tasks and is not likely to adversely affect the physical integrity, safety and health, school attendance, or their, moral, psychological, intellectual and cultural physical well-being. (Art.le 66-83 of the Labour Code) 2009. Portugal has ratified Minimum Age Convention (1973) C138 in 1989th and the convention C182 Worst Forms of Child Labour Convention (1999) on 2000th. International Trade Union Confederation (IUTC) ranks 139 countries against 97 internationally recognised indicators to assess where workers' rights are best protected, in law and in practice. Portugal has a rating of 3, from 1 to 5+, in the ITUC Global Rights Index 2014. This score is given for countries where: (There are) "Regular violation 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." UNICEF report 2012 "Measuring Child Poverty was rating 14,7% of Portuguese children below 16 years age as below "poverty line". Robust data about child labour are not recent, as the last official inquiry report is from 2001, and the results were not positive as 4,1% of children of the study were affected by child labour (CNASTI), with half of this proportion related to agriculture. 2015: FSC Portugal CNRA report states "Despite evidence of some (remaining) cases of child labour, there is evidence that this problem is not structural nor of large size. No evidence found of cases of child labour in the forest sector. The national CWRA explicitly mentions "child labour in the forest sector in Portugal is very low". There is evidence that the number of minors working illegally is rather insignificant. Authority directly involved on employment rights and conditions is Work Conditions Authority (ACT) but for many reasons other authorities are related to the issue, as Immigration and Borders Services (SEF) social security services or even tax services. All of

	them can make inspections to different issues related to work, with the joining of policies authorities as GNR-Republican National Guard and PSP-Public Security Police. ACT has strategic Plans for Agriculture and Forest activities and also does integrated inspections with Spanish authorities for agriculture and forestry activities. Recently one notice state that ACT bought a drone to help agriculture and forestry inspections. Inspective activities of ACT and SEF result on penalties or suspensions when illegal situations are found. Nevertheless, based on the available information it wasn't found any evidence confirming the existence of risks of child labour in forestry in Portugal
Means of Verification	Existing legislation Level of enforcement Regional, publicly available data from a credible third party Publicly available information (News and media)
Evidence Reviewed	Legislation: Labor Code•:Law n.º 7/09 from 12/02 http://www.act.gov.pt/(pt-PT)/Legislacao/Codigodotrabalhoatualizado/Paginas/default.aspx Law n.º 47/2012, de 29/08 at http://www.cnasti.pt/cnasti/documentos/1403451265.pdf Decree Republic President 28/2000 1/06 at http://www.ilo.org/public/portugue/region/eurpro/lisbon/pdf/conv_182.pdf Republic Assembly Resolution 11/98 at http://www.ilo.org/public/portugue/region/eurpro/lisbon/pdf/conv_138.pdf Government sources: SEF Statistical Annual reports: http://sefstat.sef.pt/relatorios.aspx SEF Inspective news about forest sector: http://www.sef.pt/portal/v10/PT/asp/Noticias/Noticias_Detalhe.aspx?id_linha=7018 http://www.sef.pt/portal/v10/PT/asp/Noticias/Noticias_Detalhe.aspx?id_linha=6802 ACT Annual Reports: http://www.act.gov.pt/(pt-PT)/SobreACT/DocumentosOrientadores/RelatorioActividades/Paginas/default.aspx News about ACT inspective work including forest: http://www.act.gov.pt/(pt-PT)/Itens/Noticias/Paginas/ACTeInspe%C3%A7%C3%A3odoTrabalhodeEspanhaema%C3%A7%C3%B5esconjuntas.aspx http://sol.sapo.pt/artigo/500544/utilizacao-de-drones-pela-inspeccao-geral-do-trabalho-gera-polemica

	ACT Strategic Plan for Agriculture and Forestry Activities: http://www.act.gov.pt/(pt-PT)/Campanhas/Campanhasrealizadas/Trabalho_Agricola_Florestal/Documents/Relat%C3%B3rio%20-%20Plano%20a%C3%A7%C3%A3o%20setor%20agr%C3%ADcola%20e%20florestal.pdf Other Sources: Overview of ILO convention ratifications by Portugal: http://www.ilo.org/public/portugue/region/eurpro/lisbon/html/portugal_convencoes_numero_pt.htm Social characterization of aggregates Portuguese Family with Children in School Age http://www.cnasti.pt/cnasti/documentos/1403450788.pdf UNICEF Innocenti Research Centre (2012), '<i>Measuring Child Poverty: New league tables of child poverty in the world's rich countries</i>', Innocenti Report Card 10, UNICEF Innocenti Research Centre, Florence at ITUC Global RIGhTs Index The woRld's woRsT CoUnTRles foR workers: http://www.ituc-csi.org/IMG/pdf/survey_ra_2014_eng_v2.pdf
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	Protection against discrimination in labour is included in Portuguese constitution (Article 55th), and labour code. Portugal has ratified ILO convention about discrimination on work and career C111 (1958) on year 1959th. Also convention about equal remuneration C100 was ratified on year 1966th. Portugal is well positioned at majority of international reports: -Corruption Perception Index scores 63 meaning low perceived level of corruption ; -Worldwide Governance Indicators (WGI) from 73.3 to 84.13 (1-100points) The WGI report six aggregate governance indicators for over 200 countries and territories over the period 1996-2014, covering i) Voice and Accountability, ii) Political Stability and

	Absence of Violence/Terrorism, iii) Government Effectiveness, iv) Regulatory Quality, v) Rule of Law, and vi) Control of Corruption. -Free country on press, net, political rights and civil liberties. On the other side Portugal (including human rights, illegal logging , forest and timber) is not listed in alarming reports or indexes such as: - Committee to Protect Journalists Impunity Index; - Human Rights Watch; - Global Witness - Chatham House - Amnesty International Some observations were found about women discrimination on jobs and remuneration and gender pay gap (see <i>below Direct Request (CEACR) - adopted 2014, published 104th ILC session (2015) Equal Remuneration Convention, 1951 (No. 100) – Portugal</i>). Also discrimination episodes were found against Roma and LGB (see below <i>Amnesty International 2014/2015 report The State of the World's Human Rights</i>) but not related to work activities. Authority directly involved on employment rights and conditions is Work Conditions Authority (ACT) but for many reasons other authorities are related to the issue, as Immigration and Borders Services (SEF) social security services or even tax services. All of them can make inspections to different issues related to work, with the joining of policies authorities as GNR-Republican National Guard and PSP-Public Security Police. ACT has strategic Plans for Agriculture and Forest activities and also does integrated inspections with Spanish authorities for agriculture and forestry activities. Recently one notice state that ACT bought a drone to help agriculture and forestry inspections. Inspective activities of ACT and SEF result on penalties or suspensions when illegal situations are found. Based on the available information, it wasn't found any evidence that confirms the existence of risks of discrimination against in respect of employment and occupation in forestry in Portugal.
Means of Verification	Existing legislation Level of enforcement Regional, publicly available data from a credible third party Publicly available information (News and media)
Evidence Reviewed	L egislation: •Portuguese Constitution •Labor Code: Law n.º 7/09 from 12/02 http://www.act.gov.pt/pt-PT/Legislacao/Codigodotrabalhoatualizado/Paginas/default.aspx •Dec-Law 42520/1959 23/09 at

	http://www.ilo.org/public/portugue/region/eurpro/lisbon/pdf/conv_111.pdf •Dec-Law 47 302/1966 on 04/11 at http://www.ilo.org/public/portugue/region/eurpro/lisbon/pdf/conv_100.pdf Other sources: •Transparency International http://www.transparency.org/cpi2015#map-container •UN Sanctions List at:https://www.un.org/sc/suborg/en/sanctions/un-sc-consolidated-list •World Bank: Worldwide Governance Indicators http://info.worldbank.org/governance/wgi/index.aspx#countryReports •Freedom house: https://freedomhouse.org/report/freedom-world/freedom-world-2016 •Committee to Protect Journalists https://www.cpj.org/reports/2014/04/impunity-index-getting-away-with-murder.php •Human Rights Watch: http://www.hrw.org/world-report/2015 •Global Witness: www.globalwitness.org Chattam House Illegal Logging Indicators Country Report Card http://www.illegal-logging.info •Amnesty International 2014/2015 report:https://www.amnesty.org/en/documents/pol10/0001/2015/en/ •Direct Request (CEACR) - adopted 2014, published 104th ILC session (2015) Equal Remuneration Convention, 1951 (No. 100) – Portugal http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:13100:0::NO::P13100_COMMENT_ID:3186668 •Overview of ILO convention ratifications by Portugal: http://www.ilo.org/public/portugue/region/eurpro/lisbon/html/portugal_convencoes_numero_pt.htm SEF Statistical Annual reports: http://sefstat.sef.pt/relatorios.aspx SEF Inspective news about forest sector: http://www.sef.pt/portal/v10/PT/asp/noticias/Noticias_Detalhe.aspx?id_linha=7018 http://www.sef.pt/portal/v10/PT/asp/noticias/Noticias_Detalhe.aspx?id_linha=6802 ACT Annual Reports: http://www.act.gov.pt/(pt-PT)/SobreACT/DocumentosOrientadores/RelatorioActividades/Paginas/default.aspx News about ACT inspective work including forest: http://www.act.gov.pt/(pt-PT)/Itens/Noticias/Paginas/ACTeInspe%C3%A7%C3%A3oTrabalhodeEspanhaema%C3%A7%C3%B5esconjuntas.aspx http://sol.sapo.pt/artigo/500544/utilizacao-de-drones-pela-inspeccao-geral-do-trabalho-gera-polemica ACT Strategic Plan for Agriculture and Forestry Activities: http://www.act.gov.pt/(pt-PT)/Campanhas/Campanhasrealizadas/Trabalho_Agricola_Florestal/Documents/Relat%C3%B3rio%20-%20Plano%20a%C3%A7%C3%A3o%20setor%20agr%C3%ADcola%20e%20florestal.pdf
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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.
Finding	Minimum wage is included in Portuguese constitution (Article 59th), and labour code. Portugal has ratified ILO convention about minimum wage C131 (1970) on year 1981th. Also convention about salary protection C95 was ratified on year 1981th. Payment and employment conditions are included and are updated on labour code. Authority directly involved on employment conditions is Work Conditions Authority (ACT) but for many reasons other authorities are related to the issue, as Immigration and Borders Services (SEF) social security services or even tax services. All of them can make inspections to different issues related to work, with the joining of policies authorities as GNR-Republican National Guard and PSP-Public Security Police. ACT has strategic Plans for Agriculture and Forest activities and also does integrated inspections with Spanish authorities for agriculture and forestry activities. Recently one notice state that ACT bought a drone to help agriculture and forestry inspections. Inspective activities of ACT and SEF result on penalties or suspensions when illegal situations are found. According to the available information about employment conditions, there is a legal framework in the country, and there are legal authorities to enforce legislation. So it is considered that Portugal has low risk that pay and employment conditions are not fair and doesn't meet, or exceed, minimum requirements.
Means of Verification	Existing legislation Level of enforcement Regional, publicly available data from a credible third party Publicly available information (News and media)
Evidence Reviewed	Legislation: •Portuguese Constitution •Labor Code: Law n.º 7/09 from 12/02 http://www.act.gov.pt/(pt-PT)/Legislacao/Codigodotrabalhoatualizado/Paginas/default.aspx Dec-Law: 77/81 on 19/06 at http://www.ilo.org/public/portugue/region/eurpro/lisbon/pdf/conv_131.pdf Dec-Law: 88/81 on 14/07 at http://www.ilo.org/public/portugue/region/eurpro/lisbon/pdf/conv_95.pdf

	Government sources: SEF Statistical Annual reports: http://sefstat.sef.pt/relatorios.aspx SEF Inspective news about forest sector: http://www.sef.pt/portal/v10/PT/asp/noticias/Noticias_Detalhe.aspx?id_linha=7018 http://www.sef.pt/portal/v10/PT/asp/noticias/Noticias_Detalhe.aspx?id_linha=6802 ACT Annual Reports: http://www.act.gov.pt/(pt-PT)/SobreACT/DocumentosOrientadores/RelatorioActividades/Paginas/default.aspx News about ACT inspective work including forest: http://www.act.gov.pt/(pt-PT)/Itens/Noticias/Paginas/ACTeInspe%C3%A7%C3%A3odoTrabalhodeEspanhaema%C3%A7%C3%B5esconjuntas.aspx http://sol.sapo.pt/artigo/500544/utilizacao-de-drones-pela-inspeccao-geral-do-trabalho-gera-polemica ACT Strategic Plan for Agriculture and Forestry Activities: http://www.act.gov.pt/(pt-PT)/Campanhas/Campanhasrealizadas/Trabalho_Agricola_Florestal/Documents/Relat%C3%B3rio%20-%20Plano%20a%C3%A7%C3%A3o%20setor%20agr%C3%ADcola%20e%20florestal.pdf
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
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).
Finding	Portugal has ratified convention ILO 184 on 2012, about agriculture health and safety in agriculture which includes forestry activities with exception of industrial forest harvesting. ILO forestry H & S code includes some of forestry activities on “high risk operations” such as climbing above 3m, but in Portuguese legislation any forestry activity is included on legal list of “High Risk Activity”. Work legislation aims to create a safe and healthy work environment at all times in accordance with society’s technical and social development. 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.

	In recent years, many obligations have changed and private entities have started to develop courses for some activities of forest workers (for example for chainsaw, machinery or phytopharmaceuticals users). There continues to be a lack of credible courses for some forest activities with lower levels of risk, such as cork or resin harvesters. Legal authority for work health and safety is ACT, who as an inspective role on the ground which includes the responsibility of evaluation and report work accidents that are recorded at hospitals. Other work accidents statistics source is GEP-Gabinete de Estratégia e Planeamento (Strategy and Planning Cabinet) which compile data about accidents which involved insurance companies. Public statistical data doesn't provide clarity on the actual level of workplace accidents or even intensity of inspections, because forest accidents are included in statistics also covering agriculture and sometimes fisheries activities, and inspections data include agriculture and forest activities. However a further research with authorities (ACT) could show that the forestry sector had an increasing of fatal accidents since 2014 (respectively 2 on year 2014, 4 on year 2015 and 7 on year 2016 until October the 20th). These numbers could show that the average rate of fatal accidents per 100 000 workers (above 58) is jumping very much far beyond the average EU rate from last available report (24 to 30) according to report with data from 2000-2005 (Safety and health in the European forestry sector/Malcolm Gifford; International Labour Office, Sectoral Activities Department – Geneva: ILO, 2009). International Trade Union Confederation (IUTC) ranks 139 countries against 97 internationally recognised indicators to assess where workers' rights are best protected, in law and in practice. Portugal has a rating of 3, from 1 to 5+, in the ITUC Global Rights Index 2014. This score is given for countries where: (There are) "Regular violation 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."
Means of Verification	• Accredited professional courses (p.e. chainsaws, machinery operator, phytopharmaceuticals applicator) card and/or specific certificates of training sessions. • Records of H& S procedures and Personal Protection Equipment distribution by the Organization. • Record of machinery safety tools and equipments on original documental register.
Evidence Reviewed	Government sources • Labour Conditions Authority-ACT (http://www.act.gov.pt/(pt-PT)/Paginas/default.aspx) • Work accident statistics from ACT (http://www.act.gov.pt/(pt-PT)/CentroInformacao/Estatistica/Paginas/AcidentesdeTrabalhoGraves.aspx) (http://www.act.gov.pt/(pt-PT)/CentroInformacao/Estatistica/Paginas/AcidentesdeTrabalhoMortais.aspx)

[http://www.act.gov.pt/\(pt-PT\)/crc/PublicacoesElectronicas/Documents/RelatorioAtividadesPromocaoSegurancaSaudeTrabalho2015.pdf](http://www.act.gov.pt/(pt-PT)/crc/PublicacoesElectronicas/Documents/RelatorioAtividadesPromocaoSegurancaSaudeTrabalho2015.pdf)

- General Direccion of Social Security :<http://www.seg-social.pt/dgss-direccao-geral-da-seguranca-social>
- Employment and Professional Training Institute at [\(https://www.iefp.pt/\)](https://www.iefp.pt/)

Strategy and Planning Cabinet:

<http://www.gep.msess.gov.pt/estatistica/acidentes/index.php>

Non-Government sources

Safety and health in the European forestry sector – The impact of more open markets and of increased regulation: http://www.ilo.org/wcmsp5/groups/public/—ed_dialogue/—sector/documents/publication/wcms_160880.pdf

Guidelines for labour inspection in forestry: http://www.ilo.org/wcmsp5/groups/public/—ed_protect/—protrav/—safework/documents/normativeinstrument/wcms_107610.pdf

Code of Practice: Safety and Health in forestry work:

http://www.ilo.org/wcmsp5/groups/public/@ed_protect/@protrav/@safework/documents/normativeinstrument/wcms_107793.pdf

ITUC Global RIGhTs Index The woRld's woRsT CoUnTRies foR workers:

http://www.ituc-csi.org/IMG/pdf/survey_ra_2014_eng_v2.pdf

- SETAA-Sindicato da Agriculture, Alimentação e Florestas: at <http://www.setaa.pt/>
- UGT-União Geral de Trabalhadores at <https://www.ugt.pt/>
- CGTP - Confederação Geral de Trabalhadores Portugueses at <http://www.cgtp.pt/>

Legislation

Labor Code• Código do Trabalho :Lei n.º 7/09 12/02 artº127º i) [http://www.act.gov.pt/\(pt-PT\)/Legislacao/Codigodotrabalhoatualizado/Paginas/default.aspx](http://www.act.gov.pt/(pt-PT)/Legislacao/Codigodotrabalhoatualizado/Paginas/default.aspx)

- Resolução da Assembleia da República nº109/2012 de 08/08 art 6º (Convention 184 doesn't apply to industrial forest work) <http://dre.pt/util/getpdf.asp?s=diad&serie=1&iddr=2012.153&iddip=20121525>

- Aviso n.º 6/2014. 01/09 <https://dre.pt/util/getpdf.asp?s=diad&serie=1&iddr=2014.6&iddip=20140033>

- Law n° 3/2014 from 28/01 <https://dre.pt/application/dir/pdf1sdip/2014/01/01900/0055400591.pdf>

- DLnº441/91, de 14/11capIII

- DL nº133/99, de 21/04 artº1º

- DL nº26/94, de 1/02 artº3º

- Lei n.º 98/2009, de 04/09 artº7º

- DLnº 128/93, de 22/04 artº1º

- Port. 988/93, de 06/10;

- DL nº141/95, de 14/06 artº5º

- Portaria n.º 1456-A/95, de 11/10; artº2º

- DL nº331/93 de 25/09, artº4º DLnº 330/93, de 25/09 artº4º

- DL 182/2006, de 6/09 , artº4º

- NP 2761:1988

	Law 102/2009 10/09 :http://www.dgpi.mj.pt/sections/leis-da-justica/pdf-ult2/lei-n-102-2009-de-10-de/downloadFile/file/lei_102.2009.pdf?nocache=1252570336.84 High Risk Works and Activities: http://www.act.gov.pt/(pt-PT)/PromocaoSST/RegulacaoServicosSST/Documents/anexos/CAE_20%2005%202014.pdf •Health and Safety Guide for Agroforestry works: http://www.act.gov.pt/(pt-PT)/Itens/Noticias/Documents/Seguran%C3%A7a%20e%20Saude%20no%20Trabalho%20no%20Setor%20Agro-Florestal.pdf
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	- Suppliers Qualification and Control Program, including confirmation of legal status of qualified suppliers in relation with health and safety requirements, and procedures for conduct monitoring field audits to verify all the aspects related with health and safety of forest workers. - Disqualify material coming from areas where there are insufficient or inappropriate safeguards to protect the health and safety of forest workers. - Promotion of Good Forest Practices - Monitoring plan

	Indicator
2.9.1	Biomass is not sourced from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks.
Finding	The high carbon stocks are considered to be in wetlands, peatlands (no forested areas related) and old mature forests stands. Information regarding wetlands in Portugal states that as usual in the region they are threatened ecosystems even when they are protected. Portugal currently has 1.8% of its territory occupied by wetlands, 79% of which is protected by the Ramsar Convention, covering this protection figure of 31 sites (about 132,487 hectares). 82% of habitats related to wetlands are degraded. Epic WebGis Portugal provides geographical information about wetlands. In the revised information one relevant risks is associated to forestry: cutting of riparian vegetation so specified risk needs to be assessed on this issue. BP shall ensure that feedstock come from riparian vegetation in wetlands complies with legislation (felling license) and do not affect to carbon stocks. Related to old mature forest stands, there is information available in the Habeas (Hotspot Areas for Biodiversity and Ecosystem Services) web page. This web page provides

	information about important areas for carbon storage related to oak forests (cork oak, holm oak and others). Legislation in Portugal is strong related to Cork and Holm oak (protected species) but not related to other type of oaks. It was found several complaints over the years about felling of oaks all around Portugal. Statistics and information revised shows that there are small examples of old mature forests from other oaks (<i>Quercus robur</i>, <i>Quercus faginea</i>, <i>Quercus pyrenaica</i>, <i>Quercus canariensis</i>) in Portugal, approximately 5,000 has of oaks older than 50 years regarding IFN5. As an example situation of <i>Quercus faginea</i> (Portuguese oak). In the first National Forest Inventory (1972/74) Portuguese oak stands that occupy at least 2 ha covers 2180 ha. In 1995 results just met 1221 ha occupied by stands. Reduction of 44%. Despite the small scale and because of the relevance of the associated habitat specified risk needs to be assessed on this issue. BP shall ensure that oaks feedstock do not come from the felling/conversion of old mature oak stands after 2008. This indicator is assessed as specified risk in: • Wetlands: felling of riparian vegetation affecting carbon stocks • Old mature forests: felling/conversion of old mature oak stands after 2008
Means of Verification	Maps, WebPages Procedures and records Regional, publicly available data from a credible third party The existence of a strong legal framework in the region Interviews with experts
Evidence Reviewed	HABEaS -Hotspot Areas for Biodiversity and Ecosystem Services; important areas for carbon storage (http://www.habeas-med.org/webgis/pt_en/) Epic WebGis Portugal (http://epic-webgis-portugal.isa.ulisboa.pt/) Quercus NGO (http://www.quercus.pt/comunicados/2011/fevereiro/522-zonas-humidas-continuam-ameacadas-em-portugal) Quercus NGO (http://www.quercus.pt/comunicados-floresta/593-2013/2982-corte-de-sobreiros-em-santa-maria-da-feira-para-construcao-de-novo-parque-empresarial), (http://www.quercus.pt/comunicados/2014/junho/3707-abate-de-sobreiros-na-zona-de-proteccao-especial-do-estuario-de-tejo-em-benavente); (http://www.quercus.pt/comunicados/2012/setembro/43-abate-ilegal-de-centenas-sobreiros-e-carvalhos-portugueses-no-parque-natural-do-sudoeste-alentejano-e-costa-vicentina) ICNF habitat 7140; peatlands/turfeiras (http://www.icnf.pt/portal/naturaclas/rn2000/resource/docs/rn-plan-set/hab/hab-7140) ICNF habitat 9230; oak forests (http://www.icnf.pt/portal/naturaclas/rn2000/resource/docs/rn-plan-set/hab/hab-9230)

	A distribuição do Carvalho Português (http://naturlink.pt/article.aspx?menuid=3&cid=1145&bl=1&viewall=true) MedWet Mediterranean wetlands initiative (http://medwet.org/aboutwetlands/) Inventario Florestal Nacional IFN5 (FloreStat_IFN5); ICNF portal (http://www.icnf.pt/portal/florestas/ifn/ifn5/rel-fin) Inventario Florestal Nacional IFN6, preliminary results (IFN6 - Resultados preliminares.pdf); ICNF portal Law 58/2005 29/12; Law 54/2005, at 15/11 (Artº 25º) Titularidade dos recursos hídricos (https://dre.pt/application/dir/pdf1sdip/2005/11/219A00/65206525.pdf)
Risk Rating	☐ Low Risk ☒ Specified Risk ☐ Unspecified Risk at RA
Comment or Mitigation Measure	- Suppliers Qualification and Control Program, including consultation of information sources regarding high carbon stocks areas (wetlands, peatlands and old mature forests stands), procedures to access information from the area regarding the riparian vegetation and old mature forests stands, and procedures for conduct monitoring field audits to verify if biomass is sourced from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks. - Disqualify material coming from areas that had high carbon stocks in January 2008 and no longer have those high carbon stocks. - Promotion of Good Forest Practices - Monitoring plan

	Indicator
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.
Finding	It was found on information reviewed that according to National Inventory (APA, I.P., 2014), from 1990 to 2012 forests are a net carbon sink, with annual sequestration values ranging between -11 MtCO₂ eq and -18 MtCO₂ eq. However on its 2015 report it is stated the negative impact of forest fires (..) <i>Estimates of emissions and sinks from land use change and forestry category show that this category has changed from being a net emitter in 1990 (1.8 Mt CO₂ eq.) to a carbon sink in 1992. This situation was again reverted in the years 2003 and 2005 due to the severe forest wildfires events registered in these years. In 2013 this sector represents a sequester of -9.4 Mt CO₂e..</i> Questions regarding forest fires are addressed at indicators 2.4.1 and 2.4.2. Under this information this indicator can be assessed at low risk.
Means of Verification	Results of analysis Regional, publicly available data from a credible third party

	The existence of a strong legal framework in the region. Interviews with experts
Evidence Reviewed	Estrategia Nacional das Florestas (RCM n.º 6-B/2015 - Diário da República n.º 24/2015, 1º Suplemento, Série I de 2015-02-04); ICNF portal (http://www.icnf.pt/portal/icnf/docref/enf) Relatório-de-Characterização-da-Fileira-Florestal-2014 (http://www.aiff.org.pt/assets/Relatorio-de-Characterizacao-da-Fileira-Florestal-2014-160p-CAPA-3-spread....pdf) Portuguese National Inventory Report on Greenhouse Gases 1990 - 2013 http://www.apambiente.pt/_zdata/Inventario/NIR_global_20151030_UNFCCC.pdf
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA

	Indicator
2.10.1	Genetically modified trees are not used.
Finding	In Portugal there is not a specific legal framework for GMO trees, but for all vascular plants. This legislation doesn't prohibit commercial use of GMO plants which is legal in the country since 1999. However, only corn (maize) is cultivated (around 6% of the total production). It hasn't been found any recent trial of GM trees in the country. Only related notice was from 1997 when Stora Enso trialed a modified variety of <i>Eucalyptus globulus</i>, which was concluded on 2001. The company (Stora Enso) is no longer in Portugal, but is still an industrial global pulp and paper player with interests in GMO. A low risk conclusion is justified because it was not evidenced interest for GMO use in the forestry sector.
Means of Verification	•List of species used. •EU Register of authorised GMOs http://ec.europa.eu/food/dyna/gm_register/index_en.cfm
Evidence Reviewed	•DL 55/2015 at 17/04 http://apambiente.pt/_zdata/Politicais/MGM/DL%2055_2015.pdf •DL 72/2003 de 10/04 (http://apambiente.pt/_zdata/Politicais/OGM/DL_72_2003.pdf) •APA-Agência Portuguesa de Ambiente at webpage: http://apambiente.pt/index.php?ref=16&subref=85&sub2ref=430 •DGAV- Direção Geral de Alimentação e Veterinária webpage: http://www.dgv.min-agricultura.pt/portal/page/portal/DGV/genericos?generico=3665233&cboui=3665233 •Plataforma Transgénicos Fora at http://stopogm.net/ensaios

	•EU Register of authorised GMOs http://ec.europa.eu/food/dyna/gm_register/index_en.cfm •Global Forest Registry: http://www.globalforestregistry.org/
Risk Rating	☒ Low Risk ☐ Specified Risk ☐ Unspecified Risk at RA