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AGENDA ITEM 4

DRAFT Catalogue of wood waste classifications in the UNECE Region

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UNEDITED VERSION

Disclaimer

This document is a draft prepared by the joint UNECE/FAO Forestry and Timber Section, based on desk research and inputs from national experts. Member States are invited to review the content and to reflect on the latest state of regulations and practice in their countries.

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LIST OF ABBREVIATIONS

AASS	Autonomous State Company for Public Services ("Azienda Autonoma di Stato per i Servizi Pubblici")
ADEME	Agency for the Ecological Transition ("Agence de la Transition Écologique")
BAT	Best Available Techniques
BD	Brcko District
BiH	Bosnia and Herzegovina
BMW	Biodegradable Municipal Waste
C&D	Construction and Demolition
C&I	Commercial and Industrial Activities
CHP	Combined Heat and Power
CIBE	Interprofessional Committee on Energy Wood ("Comité Interprofessionnel du Bois-Énergie")
CN	Combined Nomenclature
CNAE	National Classification of Economic Activities ("Clasificación Nacional de Actividades Económicas")
COFFI	Committee on Forests and the Forest Industry
CPA	Statistical Classification of Products by Activity
CPC	Central Product Classification
DIN	German Institute for Standardization ("Deutsches Institut für Normung")
EA	Environment Agency
EFC	European Forestry Commission
EPF	European Panel Federation
EPR	Extended Producer Responsibility
EWC-Stat	European Waste Classification for Statistics
FAO	Food and Agriculture Organization of the United Nations
FBiH	Federation of Bosnia and Herzegovina
FDES	Framework for the Development of Environment Statistics
FSC	Forest Stewardship Council
FWCC	Federal Waste Classification Catalogue
GIZ	German Society for International Cooperation ("Deutsche Gesellschaft für internationale Zusammenarbeit")
HS	Harmonized System

ICPE	Facilities Classified for Environmental Protection (“Installations Classées pour la Protection de l'Environnement”)
INDSTAT	Industrial Statistics Database
INE	International Statistics Institute (“Instituto Nacional de Estadística“)
Ineris	National Institute for Industrial Environment and Risks (“Institut national de l'environnement industriel et des risques“)
INSEE	National Institute of Statistics and Economic Studies (“Institut National de la Statistique et des Études Économiques“)
INSTAT	Institute of Statistics of Albania
ISIC	International Standard Industrial Classification of All Economic Activities
ISO	International Organization for Standardization
ISOH	Waste Management Information System (“Informačný systém odpadového hospodárstva”)
ISPRA	Institute for Environmental Protection and Research (“Istituto Superiore per la Protezione e la Ricerca Ambientale”)
ITGS	International Trade in Goods Statistics
IWG	Intersecretariat Working Group on Forest Sector Statistics
LoW	List of Waste
MoFTER	Ministry of Foreign Trade and Economic Relations
NACE	Statistical Classification of Economic Activities in the European Community (“Nomenclature statistique des activités économiques dans la Communauté européenne”)
NEPA	National Environmental Protection Agency
OECD	Organisation for Economic Co-operation and Development
ÖWAV	Austrian Water and Waste Management Association (“Österreichischer Wasser- und Abfallwirtschaftsverband”)
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PCP	Pentachlorophenol
PCT	Polychlorinated Terphenyl
PEFC	Programme for the Endorsement of Forest Certification
PERN	Packaging Export Recovery Note
PRN	Packaging Recovery Note
RPS	Regulatory Position Statement
RS	Republica Srpska
SDES	Data and Statistical Studies Department (“Service des Données et Études Statistiques”)
SEEA–CF	System of Environmental-Economic Accounting – Central Framework

SITC	Standard International Trade Classification
SSD	Waste Status Removed (“Sortie de Statut de Déchets“)
SWM	Solid Waste Management
TC	Technical Committee
VTT	State Technical Research Center (“Valtion teknillinen tutkimuskeskus”)
WCO	World Customs Organization
WfH	Waste from Households
WRA	Wood Recyclers Association
UK	United Kingdom
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFC	United Nations Framework Classification for Resources
UNI	Italian National Unification (“Ente Nazionale Italiano di Unificazione”)
UNIDO	United Nations Industrial Development Organization
UNSD	United Nations Statistics Division

INTRODUCTION

In the context of a growing demand for wood and cellulose-based products, the sustainable sourcing of wood is becoming more and more important. Increasing the availability of woody biomass by recovering wood from processing and end-of-life products is a recognized means of providing additional volumes of wood resource and enhancing environmental efficiency of wood-based value chains.

An increased recovery of wood waste from industrial production and urban collection appears to be of key importance to prolonging the technological cycle of material circulation and of closing the circular economy loop, before organic residues, ashes and CO_2 can be used as nutrients for new trees. Today, recovered waste streams are most commonly used in bioenergy production, in recycling (wood-based panels production) and in biodegradation (composting).

The management of wood waste streams differs among countries. It often depends on national regulations and waste classifications, which are sometimes applied to trade with neighboring counties. There is no commonly applied international classification of wood waste streams. Consequently, there seems to be a gap in efficient absorbtion of wood residues back into industry processes and forest ecosystems. An international classification would not only allow a better monitoring and quantification of wood waste streams but could potentially unfold new outlets for them. In this context, this UNECE/FAO work on wood waste classification aims to:

1. Take stock of existing classifications developed by governments and various organizations (as presented in this catalogue).
2. Develop a classification for the UNECE region which could serve for data collection.
3. Based on that classification, develop a practical tool (a standard) facilitating wood waste trade in the region.

BACKGROUND

The Joint UNECE/FAO Forestry and Timber Section's (Joint Section) work on wood waste classification results from the mandate given by the UNECE Committee on Forests and the Forest Industry (COFFI) and the FAO European Forestry Commission (EFC) during their joint session in 2019 (ECE/TIM/2019/2-FO:EFC/2019/2; ECE/TIM/2019/3-FO:EFC/2019/3). In line with this mandate, the Joint Section is pursuing "activities containing research and stock taking elements as well as proposals for guidance tools and recommendations for member States".

This work is also implementing the "List of 2020 activities and activities planned for 2021" under the Work Area 2 Policy Dialogue and Advice on "exploration of the issue of wood-based value chains in a circular bio-economy" (ECE/TIM/2020/5).

The present catalogue takes stock of existing international and national wood waste classifications. It reveals the multitude of existing definitions, standards, regulations and classifications pretraining to wood waste streams in the UNECE region. This complexity constitutes a barrier not only for the data collection and market analysis but also, and foremost, for the repurposing and reuse of these waste streams in different wood-based value chains in a circular economy.

Information gathered in the catalogue can serve as background for further work by the Joint Section towards the development of a standard classification of wood waste streams in the UNECE region. Such a standard classification could be developed based on the analysis of definitions and methodologies presented in the catalogue. The classification could serve as a starting point for the development of two practical tools supporting

forest sector in transition towards a circular economy (1) a UNECE/FAO questionnaire for data collection on wood waste and (2) a UNECE/FAO quality standard supporting trade of wood waste streams in the UNECE region.

METHODOLOGY

The information presented in this catalogue is based on a combination of desk research and individual communication with experts.

In the first step, a list of countries covered in this publication was compiled including all United Nations Economic Commission for Europe (UNECE) and Food and Agriculture Organization European Forestry Commission (FAO EFC) member countries. A list of international classifications was compiled through an initial desk research. Iteratively, additions were made to the list to present a comprehensive picture.

The desk research for the national classifications was performed through an engine with the following terms: *country* wood waste classification, *country* wood waste, *country* waste classification, *country* wood waste legislation and *country* waste legislation. After a search in English, the machine-translated search terms in one or two official languages of the country were used to perform a search in other languages than English. Google and Google Scholar were used as search engines, while machine translations were performed with Google Translate and the Microsoft Word Translator. The websites and documents extracted through the desk research were chosen according to their relevance in containing information on post-consumer wood waste in the country as well as their reliability. Information from official sources was favored. In this publication, the country information on post-consumer wood waste is structured into Legal basis, Sectoral classification and Statistical classification.

To ensure clarity, the waste codes of the European List of Waste are referred to in the catalogue as “LoW codes”. Primary sources often speak of “EWC codes” due to the former name of the European List of Waste, European Waste Catalogue, in which LoW codes were called European Waste Codes. This abbreviation is avoided because of a possible confusion with the “EWC-Stat codes” from the European Waste Classification for Statistics. A transposition table between EWC-Stat codes and LoW codes for wood waste is included in the catalogue (Table 2).

The desk research for the international classifications was based on the information provided by the responsible global and European issuing bodies. For each classification, its relevance and applicability for wood waste was presented.

The desk research was complemented with individual communication with experts on the national and international classifications between October 2020 and February 2021. They mostly included experts working regularly with the joint UNECE/FAO Forestry and Timber Section such as statistical department officials and ministry employees. Moreover, experts from the wood-processing industry, university scholars and employees of non-governmental organizations were contacted. The voluntary contributions of all experts have greatly contributed to presenting an up-to-date and comprehensive picture.

A limitation for assessing the fate of post-consumer wood waste in many countries was the lack of disaggregated data. Data published in most national waste statistics included wood waste quantities, however they were sometimes not further disaggregated by source, composition or way of treatment. In terms of the work process, the communication with country experts was often delayed or complicated by the Covid-19 pandemic. It is important to note that this catalogue presents a first overview of classifications, more information from country experts is expected in the coming months.

THE INTERNATIONAL CONTEXT

GLOBAL CLASSIFICATIONS

FAOSTAT DATABASE

The FAOSTAT database[1], maintained by the Food and Agriculture Organization of the United Nations (FAO), provides access to aggregated food and agriculture data. The indicator "Forestry Production and Trade"[2] includes quantities and values of recovered post-consumer wood by country. The definition for recovered post-consumer wood is formulated as follows: "Recovered wood such as pallets, private household waste, as well as used wood arising from construction or demolition of buildings or from engineering works, whether contaminated or not. It can be recycled or reused for material or energy purposes. It excludes post-consumer wood that will not be reused (e.g. sent to landfill). It is reported in metric tons."[3]

ISO CLASSIFICATIONS

The International Organization for Standardization[4] (ISO) develops and publishes international standards. Several ISO Technical Committees (TC's) work on wood waste: The timber committee[5] (ISO/TC 218), the committee for sustainable processes for wood and wood-based products[6] (ISO/TC 287) and the committee on wood-based panels[7] (ISO/TC 89).

The timber committee's working group on wood residue and post-consumer wood (ISO/TC 218/WG 7) is currently (February 2021) developing a standard for "Wood residue and post-consumer wood – Classification – Part 1: Vocabulary"[8] (ISO/DIS 17300-1).

The standard on a chain of custody of wood and wood-based products[9] (ISO 38200) was published in 2018 by the committee for sustainable processes for wood and wood-based products. It specifies the requirements for a chain of custody of wood and wood-based products that allow users to trace the origins of wood and wood products every step along the supply chain. The standard allows for a determination if the material is "verified", for which evidence of compliance with the requirements of a due diligence system can be provided; "specified", where it meets specific publicly available documented requirements set by organizations; "certified", when it satisfies the requirements of a particular certification scheme; or "recycled", if it has been recovered or otherwise diverted from the waste stream.

Solid biofuels are specified and classified in ISO 17225[10], a series of standards for the following biofuel types: graded wood pellets, graded wood briquettes, graded wood chips, graded firewood, graded non-woody pellets and graded non-woody briquettes.

[1] www.fao.org/faostat/en/#home
[2] www.fao.org/faostat/en/#data/FO
[3] www.fao.org/forestry/7800-0a5babc2847536d345f55cf15f77c2601.pdf
[4] www.iso.org/home.html
[5] www.iso.org/committee/54976.html
[6] www.iso.org/committee/4952370.html
[7] www.iso.org/committee/50428.html
[8] www.iso.org/standard/65044.html?browse=tc
[9] www.iso.org/standard/70179.html
[10] www.iso.org/obp/ui/#iso:std:iso:17225:-1:ed-1:v1:en

UNITED NATIONS FRAMEWORK CLASSIFICATION FOR RESOURCES (UNFC)

The United Nations Framework Classification for Resources[11] (UNFC) is a universal standard for the classification and management of all energy and raw material resources. It is developed by the Expert Group on Resource Management[12], which is an open forum for sustainable resource management administered by UNECE[13]. Initially developed in 1997 for solid fuels and minerals, the UNFC classifies resource quantities based on the three fundamental criteria of environmental-socio-economic viability, technical maturity and degree of confidence in estimates.

Bioenergy resources have been classified under UNFC since 2017[14]. To meet the UNFC Bioenergy Specification, the bioenergy sources must be converted to energy products, which should be directly linked to (or a direct replacement of) a fungible energy commodity and saleable in an established market[15]. Wood waste is part of the classification and waste streams such as unprocessed forestry biomass, industrial by-products (cardboard, demolition timber), and municipal solid waste bio-fraction could be considered bioenergy sources. However, they are excluded from being considered energy products.

Source: Harikrishnan Tulsidas, personal communication, 2021

UNEP BASEL CONVENTION

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal[16] was adopted in 1989 in Basel, Switzerland. It is administered by the United Nations Environment Programme (UNEP). 186 parties have ratified the Basel Convention[17] (February 2021). The Basel Convention defines different types of hazardous and non-hazardous waste in the form of Y codes (Y1 – Y48)

There is no Y code specifically for wood waste. However, wood waste is listed under (i) List A ("Amber list") – A3 (Wastes containing principally organic constituents, which may contain metals and inorganic materials) and (ii) List B ("Green list") – B3 (Wastes containing principally organic constituents, which may contain metals and inorganic materials) – B3050 (Untreated cork and wood waste – Wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms). Wastes from List A and List B are subject to different control procedures.

UNSD CENTRAL PRODUCT CLASSIFICATION (CPC)

The Central Product Classification[18] (CPC; current version CPC Ver. 2.1) is a comprehensive economic classification of all goods and services administered by the United Nations Statistics Division (UNSD). It classifies products based on the physical characteristics of goods or on the nature of Services. The classification is based on a five-digit code, with one digit each for the section, the division, the group, the class and the subclass.

[11] unece.org/DAM/energy/se/pdfs/UNFC/publ/UNFC_ES61_Update_2019.pdf
[12] unece.org/sustainable-energyunfc-and-sustainable-resource-management/egrm-and-bureau#:~:text=The%20Expert%20Group%20on%20Resource,further%20development%20of%20the%20United
[13] unece.org/
[14] unece.org/sustainable-energyunfc-and-sustainable-resource-management/unfc-and-bioenergy
[15] unece.org/DAM/energy/se/pdfs/UNFC/UNFC-Bioenergy-Specifications/Specification_Bioenergy.pdf
[16] www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-IMPL-CONVTEXT.English.pdf
[17] www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx
[18] unstats.un.org/unsd/classifications/Econ/Download/In%20Text/CPCv2.1_complete(PDF)_English.pdf

Wood is mainly listed under division 03 (Forestry and logging products) group 031 and division 31 (Products of wood, cork, straw and plaiting materials) groups 311 – 319. The correspondence tables between CPC Ver. 2.1, ISIC Rev. 4 (p. 11) and HS 2017 (p. 13) are available on the UNSD website[19].

UNSD FRAMEWORK FOR THE DEVELOPMENT OF ENVIRONMENT STATISTICS (FDES)

The Framework for the Development of Environment Statistics [20] (FDES; current version FDES 2013) is a conceptual and statistical framework that is flexible, multipurpose, comprehensive and integrative. It was developed by UNSD. The Framework provides an organizing structure for environment statistics, encompassing their scope, collection and synthesis.

Wood is included in topic 2.2.2 (Production, trade and consumption of energy) and topic 2.5.1 (Timber resources). Post-consumer wood is not considered there. However, topics 3.3.1 and 3.3.2 on the generation and management of waste describe potential aggregations of waste statistics by type of waste, by waste stream or by waste category.

UNSD INTERNATIONAL STANDARD INDUSTRIAL CLASSIFICATION OF ALL ECONOMIC ACTIVITIES (ISIC)

The International Standard Industrial Classification of All Economic Activities[21] (ISIC; current version ISIC Rev. 4) is the international reference classification of productive activities administered by UNSD. It is used by international organizations and many countries for publishing and analyzing data by economic activity. The classification is based on a four-digit code containing the section, division, group and class. ISIC is linked to the Industrial Statistics Database[22] (INDSTAT; current version INDSTAT 4), which contains highly disaggregated data on the manufacturing sector for the period 1990 onwards. It is maintained by United Nations Industrial Development Organization (UNIDO). The database operates with ISIC codes and contains data for 106 countries on the following indicators: Number of establishments, Number of employees, Wages and salaries, Output, Value added, Gross fixed capital formation and Number of female employees.

In ISIC Rev. 4, activities related to wood are listed in section A division 02 (Forestry and logging) and section C division 16 (Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials). The correspondence table between ISIC Rev. 4 and CPC Ver. 2.1 (p. 10) is available on the UNSD website[23], while the correspondence between ISIC Rev. 4 and NACE Rev. 2 (p. 17) is available on the Eurostat website[24].

[19] unstats.un.org/unsd/classifications/Econ/cpc
[20] unstats.un.org/unsd/environment/FDES/FDES-2015-supporting-tools/FDES.pdf
[21] unstats.un.org/unsd/classifications/Econ/Download/In%20Text/ISIC_Rev_4_publication_English.pdf
[22] stat.unido.org/content/dataset_description/indstat-4-2020%252c-isic-revision-4
[23] unstats.un.org/unsd/classifications/Econ/cpc
[24] ec.europa.eu/eurostat/ramon/relations/index.cfm?TargetUrl=LST_LINK&StrNomRelCode=ISIC%20REV.%204%20-%20NACE%20REV.%202&StrLanguageCode=EN

UNSD STANDARD INTERNATIONAL TRADE CLASSIFICATION (SITC)

The Standard International Trade Classification[25] (SITC; current version SITC Rev. 4) is used by countries and international organizations for compiling international trade statistics and economic analyses. The SITC is administered by UNSD. Its classification scheme is based on a five-digit code for the section, division, group, subgroup and basic heading. Its structure is basically identical to the Harmonized System, the only difference being the stronger focus on the use of goods rather than the material composition.

Wood products are listed in section 2 (Crude materials, inedible, except fuels) division 24 (Cork and wood) and section 6 (Manufactured goods classified chiefly by material) division 63 (Cork and wood manufactures, excluding furniture). The correspondence table between SITC Rev. 4 and HS 2017 (p. 13) is available on the UNSD website[26].

UNSD SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING – CENTRAL FRAMEWORK (SEEA – CF)

The System of Environmental-Economic Accounting – Central Framework[27] (SEEA–CF; current version SEEA–CF 2012) is an international statistical standard for measuring the environment and its relationship with the economy. The Central Framework covers measurement in three main areas:

- Environmental flows (the flows of natural inputs, products and residuals between the environment and the economy, and within the economy, both in physical and monetary terms),
- Stocks of environmental assets,
- Economic activity related to the environment (monetary flows associated with economic activities related to the environment, including spending on environmental protection and resource management, and the production of 'environmental goods and services').

For both timber and waste statistics, the environment statistics data used in SEEA is based on FDES (p. 11).

UNSD/UNEP QUESTIONNAIRE ON ENVIRONMENT STATISTICS

The Questionnaire on Environment Statistics[28] is part of the biennial data collection by UNSD/UNEP from all countries except those that are covered by the OECD/Eurostat Joint Questionnaire (p. 17). Data on the topics of water and waste is collected. The data collection for waste includes waste generation by source following ISIC Rev. 4 (p. 11), management of hazardous waste and management and composition of municipal waste[29].

No data is collected specifically on wood waste.

[25] unstats.un.org/unsd/publication/SeriesM/SeriesM_34rev4E.pdf
[26] unstats.un.org/unsd/trade/classifications/correspondence-tables.asp
[27] seea.un.org/sites/seea.un.org/files/seea_cf_final_en.pdf
[28] unstats.un.org/unsd/envstats/questionnaire
[29] unstats.un.org/unsd/envstats/Questionnaires/2020/q2020_Waste_English.pdf

WCO HARMONIZED SYSTEM (HS)

The Harmonized Commodity Description and Coding System[30], generally referred to as Harmonized System (HS; current version HS 2017), is an international product nomenclature that has been developed by the World Customs Organization (WCO). The system is used by more than 200 countries and economies as a basis for the collection of international trade statistics and many other purposes. The HS is divided into sections, chapters, headings and headings labels through a six-digit code.

Wood products are listed in section IX chapter 44[31] (Wood and articles of wood; wood charcoal). The correspondence between HS 2017 and SITC Rev. 4 (p. 12) is available on the UNSD website[32].

[30] www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs-nomenclature-2017-edition/hs-nomenclature-2017-edition.aspx

[31] www.wcoomd.org/-/media/wco/public/global/pdf/topics/nomenclature/instruments-and-tools/hs-nomenclature-2017/2017/0944_2017e.pdf?la=en

[32] unstats.un.org/unsd/trade/classifications/correspondence-tables.asp

EUROPEAN UNION CLASSIFICATIONS

EUROSTAT CIRCULAR ECONOMY MONITORING FRAMEWORK

The Circular Economy Monitoring Framework[33] by Eurostat has been implemented as part of the EU circular economy action plan. The Framework aims at measuring progress towards a circular economy in a way that encompasses its various dimensions at all stages of the lifecycle of resources, products and services. Therefore, it consists of a set of ten indicators grouped into four stages and aspects of the circular economy: (i) production and consumption, (ii) waste management, (iii) secondary raw materials and (iv) competitiveness and innovation[34]. The indicators for waste management encompass general and specific recycling rates.

Wood waste recycling rates are included in the indicators:

- Recycling rate of wooden packaging,
- Recycling of biowaste,
- Recovery rate of construction and demolition waste.

The data sources include the Ministries of Environment, the waste section of the OECD/Eurostat Joint Questionnaire (p. 17) and waste data submitted to Eurostat by EU member states on the basis of the Waste Statistics Regulation (p. 19).

EUROSTAT COMBINED NOMENCLATURE (CN)

The Combined Nomenclature[35] (CN) classification is the main classification for the European International Trade in Goods Statistics (ITGS). It is administered by Eurostat and used by EU member states for collecting data on the trading of goods. The CN corresponds to the Harmonized System (p. 13) plus a further breakdown at eight-digit level defined to meet EU needs.

Wood products are listed in section IX chapter 44 (Wood and articles of wood; wood charcoal).

[33] ec.europa.eu/environment/circular-economy/pdf/monitoring-framework.pdf
[34] ec.europa.eu/eurostat/web/circular-economy/indicators/monitoring-framework
[35] ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=CN_2020

Table 1: Wood products in the Eurostat Combined Nomenclature classification

- IX	SECTION IX - WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL; CORK AND ARTICLES OF CORK; MANUFACTURES OF STRAW, OF ESPARTO OR OF OTHER PLAITING MATERIALS; BASKETWARE AND WICKERWORK
- 44	CHAPTER 44 - WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL
+ 4401	Fuel wood, in logs, in billets, in twigs, in faggots or in similar forms; wood in chips or particles; sawdust and wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms
+ 4402	Wood charcoal (including shell or nut charcoal), whether or not agglomerated
+ 4403	Wood in the rough, whether or not stripped of bark or sapwood, or roughly squared
+ 4404	Hoopwood; split poles; piles, pickets and stakes of wood, pointed but not sawn lengthwise; wooden sticks, roughly trimmed but not turned, bent or otherwise worked, suitable for the manufacture of walking sticks, umbrellas, tool handles or the like; chipwood and the like
4405 00 00	Wood wool; wood flour
+ 4406	Railway or tramway sleepers (cross-ties) of wood
+ 4407	Wood sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, of a thickness exceeding 6 mm
+ 4408	Sheets for veneering (including those obtained by slicing laminated wood), for plywood or for similar laminated wood and other wood, sawn lengthwise, sliced or peeled, whether or not planed, sanded, spliced or end-jointed, of a thickness not exceeding 6 mm
+ 4409	Wood (including strips and friezes for parquet flooring, not assembled) continuously shaped (tongued, grooved, rebated, chamfered, V-jointed, beaded, moulded, rounded or the like) along any of its edges, ends or faces, whether or not planed, sanded or end-jointed
+ 4410	Particle board, oriented strand board (OSB) and similar board (for example, waferboard) of wood or other ligneous materials, whether or not agglomerated with resins or other organic binding substances
+ 4411	Fibreboard of wood or other ligneous materials, whether or not bonded with resins or other organic substances
+ 4412	Plywood, veneered panels and similar laminated wood
4413 00 00	Densified wood, in blocks, plates, strips or profile shapes
+ 4414 00	Wooden frames for paintings, photographs, mirrors or similar objects
+ 4415	Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards, of wood; pallet collars of wood
4416 00 00	Casks, barrels, vats, tubs and other coopers' products and parts thereof, of wood, including staves
4417 00 00	Tools, tool bodies, tool handles, broom or brush bodies and handles, of wood; boot or shoe lasts and trees, of wood
+ 4418	Builders' joinery and carpentry of wood, including cellular wood panels, assembled flooring panels, shingles and shakes
+ 4419	Tableware and kitchenware, of wood
+ 4420	Wood marquetry and inlaid wood; caskets and cases for jewellery or cutlery, and similar articles, of wood; statuettes and other ornaments, of wood; wooden articles of furniture not falling in Chapter 94
+ 4421	Other articles of wood

Source:
ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=CN_2020&StrLanguageCode=EN&IntPcKey=44761984&StrLayoutCode=

EUROPEAN LIST OF WASTE (LOW)

The European List of Waste[36] (LoW), formerly called European Waste Catalogue, provides an EU-wide common terminology for waste classification for administrative purposes. It has been adopted through the European Commission Decision on the list of waste[37] (2000/532/EC, last amended in 2014). The assignment of LoW codes serves in a broad variety of activities, including the transport of waste, installation permits (which often refer also to specific waste codes), or as a basis for waste statistics[38]. The classification is based on a six-digit code that ascribes waste types mainly according to the source of the waste. Any waste marked with an asterisk (*) in the List of Waste is considered hazardous waste. The first two digits of the LoW codes describe the chapter (01-20), whereas the second two digits describe the sub-chapter and the last two digits describe the entry. Most wood waste is included in chapter 03 (Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard), however some wood wastes belong to chapters 15, 17, 19 or 20. The wood waste entries can be transposed to the EWC-Stat (p. 16) code 07.5 Wood wastes (Table 2).

[36] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014D0955&from=EN
[37] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014D0955&from=EN
[38] ec.europa.eu/environment/waste/framework/list.htm

Table 2: Wood waste types according to EWC-Stat and LoW codes (LoW codes in grey boxes)

07.5 Wood wastes		
07.51 Wood packaging		
0 Non-hazardous		
	15 01 03	wooden packaging
07.52 Sawdust and shavings		
0 Non-hazardous		
	03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
1 Hazardous		
	03 01 04*	sawdust, shavings, cuttings, wood, particle board and veneer containing dangerous substances
07.53 Other wood wastes		
0 Non-hazardous		
	03 01 01	waste bark and cork
	03 03 01	waste bark and wood
	17 02 01	Wood
	19 12 07	wood other than that mentioned in 19 12 06
	20 01 38	wood other than that mentioned in 20 01 37
1 Hazardous		
	19 12 06*	wood containing dangerous substances
	20 01 37*	wood containing dangerous substances
07.53 Other wood wastes		

Source: Eurostat, 2010

EUROPEAN STATISTICAL CLASSIFICATION OF PRODUCTS BY ACTIVITY (CPA)

The Statistical Classification of Products by Activity[39] (CPA; current version CPA Ver. 2.1) is an economic classification of goods and services at the European level. The CPA was introduced by the European Commission Regulation establishing a new statistical classification of products by activity[40] (2008/451/EC). It is based on a six-digit code describing the section, division, group, class, category and subcategory of a product. The CPA classification is closely linked to the UNSD CPC classification (p. 10) through a correspondence table[41]. Moreover, each CPA product - whether a transportable or non-transportable good or a service - is assigned to one single NACE activity (p. 17). This linkage to NACE activities gives the CPA a structure parallel to that of NACE at all levels[42].

EUROPEAN WASTE CLASSIFICATION FOR STATISTICS (EWC-STAT)

The European Waste Classification for Statistics (EWC-Stat; current version EWC-Stat Ver. 4) is a mainly substance-oriented aggregation of the waste types defined in the European List of Waste (p. 15). The result is a 1:n relationship between EWC-Stat and LoW which allows for the unambiguous conversion of the waste types classified according to LoW codes into the EWC-Stat waste categories. The EWC-Stat classification was established by the Waste Statistics Regulation[43] (2002/2150/EC, last amended in 2010). In practice, most of the countries collect their data according to the List of Waste and convert it subsequently into the required EWC-

39 ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=CPA_2008&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC

40 eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008R0451&from=EN

41 ec.europa.eu/eurostat/documents/1995700/1995914/CorrespondencetableCPA2008-CPCver2.pdf/162682cb-9937-4e23-9fca-00a33cb46912

42 classifications.scfe.eu/correspondence/nacer2-cpav21

43 eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002R2150&from=en

Stat categories on the basis of a transposition table defined in the Annex of the Waste Statistics Regulation (p. 19). Reporting of waste statistics to Eurostat occurs in EWC-Stat code format.

The transposition table is also available for wood waste (Table 2).

OECD/ EUROSTAT JOINT QUESTIONNAIRE ON THE STATE OF THE ENVIRONMENT

The Joint Questionnaire on the State of the Environment[44] is issued by the Organisation for Economic Co-operation and Development[45] (OECD) and Eurostat. The Questionnaire covers 9 environmental areas, one of which is waste.

No data is collected specifically on wood waste.

STATISTICAL CLASSIFICATION OF ECONOMIC ACTIVITIES IN THE EUROPEAN COMMUNITY (NACE)

The Statistical classification of economic activities in the European Community[46] (NACE; current version NACE Rev. 2) provides the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics (e.g. production, employment and national accounts). The NACE Rev. 2 classification was introduced by the European Commission Regulation establishing the statistical classification of economic activities NACE Revision 2[47] (2006/1893/EC). Identically to the structure of ISIC Rev. 4 (p. 11), the NACE Rev. 2 classification is based on a four-digit code containing the section, division, group and class[48]. The only difference between the classifications is a further breakdown of some groups and classes in NACE Rev. 2 to better suit the structures of the European economies.

Activities related to wood are listed in section A division 02 (Forestry and logging) and section C division 16 (Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials).

[44] www.oecd.org/statistics/data-collection/Environmental%20Data_SOE%20guidelines.pdf
[45] www.oecd.org/
[46] ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF.pdf/dd5443f5-b886-40e4-920d-9df03590ff91?t=1414781457000
[47] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02006R1893-20080429&from=EN
[48] ec.europa.eu/eurostat/ramon/relations/index.cfm?TargetUrl=LST_LINK&StrNomRelCode=ISIC%20REV.%204%20-%20NACE%20REV.%202&StrLanguageCode=EN

EUROPEAN UNION DIRECTIVES AND REGULATIONS

A directive is not directly applicable in the EU member states as a regulation. It is to be incorporated in the national legislation within a certain timeframe. On the other hand, a regulation has a binding legal force that every member state has to follow, and it is put into force on a particular date all across the EU.

WASTE FRAMEWORK DIRECTIVE

The Directive on waste[49] (2008/98/EC) sets the basic concepts and definitions related to waste management, such as definitions of waste, recycling, and recovery. It explains end-of-waste criteria (when waste ceases to be waste and becomes a secondary raw material) and the distinction between waste and by-products. The Directive lays down some basic waste management principles. Waste management should not endanger human health or harm the environment, in particular water, air, soil, plants or animals. The waste management hierarchy is established, which is a priority order for product and waste treatment operations, starting with waste prevention (at the product level) followed by preparing for reuse, recycling, other recovery and disposal (at the waste level). Deriving from the hierarchy is possible when it is justified by life-cycle thinking on the overall impacts of the generation and management of a specific waste. The Directive introduces the producer pays principle, the extended producer responsibility principle and recycling and recovery targets of 50% for municipal waste streams and 70% for construction and demolition waste by 2050. In addition, member states are required to adopt waste management plans and waste prevention programs.

Wood waste is not specifically mentioned in the Directive.

LANDFILL DIRECTIVE

The Directive on the landfill of waste[50] (1999/31/EC, last amended in 2018) was introduced to prevent and reduce as far as possible negative effects on the environment caused by landfilling. The Directive aims to protect are surface water, groundwater, soil, air and human health. The Directive introduces technical requirements for waste and landfills. Three classes of landfills are defined: landfills for hazardous waste, landfills for non-hazardous waste (including municipal waste) and landfills for inert waste.

Wood waste may be classified as non-hazardous or hazardous waste. The amendment of the Directive[51] (2018/850/EU) introduced a maximum quota of 10% for the landfilling of municipal waste by 2035.

PACKAGING AND PACKAGING WASTE DIRECTIVE

The Directive on packaging and packaging waste[52] (94/62/EC, last amended in 2018) was introduced to prevent and reduce the impact of packaging and packaging waste on the environment. The amendment of the Directive[53] (2018/852/EU) also aims at preventing the production of packaging waste and promoting its reuse, recycling and other recovery.

[49] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0098&from=EN
[50] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31999L0031&from=EN
[51] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L0850&from=EN
[52] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31994L0062&from=en
[53] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L0852&from=EN

The Directive states recycling targets for wood waste of 25% by 2025 and 30% by 2030. Since the amendment, wooden packaging repaired for reuse may also be taken into account. The recycling targets for all other waste streams mentioned in the Directive are of minimum 50%. In addition, EU member states are required to minimize the content of hazardous substances and to design reusable or recoverable packaging. The Directive stipulates that extended producer responsibility schemes should be established for all packaging by 2024.

INDUSTRIAL EMISSIONS DIRECTIVE

The Directive on industrial emissions[54] (2010/75/EU) replaces the former Directive on the incineration of waste[55] (2000/76/EC). The Industrial Emissions Directive imposes strict emission limits on the pollutants being released in the air or water after the incineration of waste. It also states operating conditions and technical requirements for waste incineration plants. Emission limit values for industrial plants must be based on the Best Available Techniques (BAT) laid out in BAT Reference Documents[56].

In the Directive, wood waste is included in the biomass definition with the exception of 'wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating and which includes, in particular, such wood waste originating from construction and demolition waste' (Article 3, 31b). In the BAT Reference Document for waste incineration[57], these are treated as hazardous wood waste streams.

WASTE STATISTICS REGULATION

The Regulation on waste statistics [58] (2002/2150/EC, last amended in 2010) introduces a framework for the production of statistics related to the generation, recovery and disposal of waste across EU member states. This excludes radioactive waste. It establishes the EWC-Stat classification (p. 16) as well as transposition tables between EWC-Stat codes and LoW (p. 15) codes.

[54] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0075&from=EN
[55] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32000L0076&from=EN
[56] eippcb.jrc.ec.europa.eu/reference/
[57] eippcb.jrc.ec.europa.eu/sites/default/files/2020-01/JRC118637_WI_Bref_2019_published_0.pdf
[58] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002R2150&from=en

SECTORAL CLASSIFICATIONS

EPF STANDARD

The European Panel Federation (EPF) Voluntary Standard applies to recycled wood and panels from recycled wood. It comprises wooden by-products from processing and manufacturing as well as post-consumer wood. The Standard sets requirements for contaminants, contamination limits[59], test methods, cleanliness and delivery conditions of these materials. In addition to the Standard, local quality requirements may apply. According to the Standard, wood exceeding the chemical contamination limits and preservative-treated wood are unacceptable for recycling. The recycled wood should not contain contaminating materials (soil, concrete, slate, stones, textile, plastic, rubber, wastepaper, cardboard, metal) above 2% of total dry weight. Moisture content should be limited to 20%.[60] The panel industry is highly committed to the EPF Standard, which also provides the basis for other European norms and labels such as the EU Ecolabel for furniture (p. 20).[61]

EU ECOLABEL FOR FURNITURE

The EU Ecolabel[62] is a label of environmental excellence that was established in 1992. It is awarded to products and services meeting high environmental standards throughout their life cycle, including the extraction of raw materials, production, distribution and disposal. The EU Ecolabel promotes the circular economy by encouraging companies to develop products that are durable, easy to repair and recycle and manufactured sustainably.

The EU Ecolabel product catalogue[63] gives an overview over products covered by the EU Ecolabel, including furniture and paper products. Regarding the EU Ecolabel for furniture[64], ecological criteria were established by the European Commission in 2016[65]. The Ecolabel restricts the use of hazardous substances in the manufacture of furniture. Moreover, if the content of wood or wood-based panels exceeds 5 % of the product weight, all wood, cork, bamboo and rattan shall be covered by valid chain of custody certificates issued by an independent third party certification scheme such as FSC (p. 21), PEFC (p. 22) or equivalent and at least 70% of the material shall be sourced from sustainably managed forests and/or recycled material. In this context, recycled material refers to material that has been reprocessed from recovered/reclaimed material and made into a product, excluding waste wood, chips and fibers from logging and sawmilling operations.

[59] The limit values are as follows (in mg/kg dry mass): As 25; Cd 50; Cr 25; Cu 40; Pb 90; Hg 25; F 100; Cl 1000; PCP 5; creosote 0.5
[60] europanels.org/wp-content/uploads/2018/09/EPF-Standard-for-recycled-wood-use.pdf
[61] Omar Degoli, personal communication, 2020
[62] ec.europa.eu/environment/ecolabel/index_en.htm
[63] ec.europa.eu/ecat/
[64] ec.europa.eu/environment/ecolabel/documents/factsheet_furniture.pdf
[65] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016D1332&from=EL

FSC CERTIFICATIONS

The Forest Stewardship Council[66] (FSC) is an international non-profit organization that promotes sustainable forest management globally. The FSC global forest certification system establishes standards and labels for forests and forest products. The FSC issues three product labels[67]:

- FSC 100% (for products based on inputs exclusively from FSC-certified natural forests or plantations),
- FSC Recycled (for recycled products based on inputs exclusively from reclaimed sources),
- FSC Mix (for products based on inputs of one or more of the following material categories: FSC 100%, FSC Mix, FSC Recycled, controlled material, FSC Controlled Wood, post-consumer reclaimed, and/or pre-consumer reclaimed).

Post-consumer wood waste is part of the category "post-consumer reclaimed materials"[68], to which the FSC Recycled label or FSC Mix label may apply. These labels are part of the FSC Chain of Custody certification[69] (FSC-STD-40-004 Ver. 3-1) that follows the sourcing, processing, trading and distribution of FSC-certified products.

A complementary standard to the Chain of Custody certification is the Sourcing Reclaimed Material standard[70] (FSC-STD-40-007 ver. 2-0). According to the standard, a reclaimed material is a material that demonstrably would have otherwise been disposed of as waste or used for energy recovery. Examples of reclaimed wood material eligible for the standard include commercial transport packaging, construction and demolition debris, damaged stock and deconstructed building materials.

IWG JOINT FOREST SECTOR QUESTIONNAIRE (JSFQ)

The Joint Forest Sector Questionnaire[71] (JFSQ) collects information on national forest sector statistics including the production and trade of forest products and secondary wood products. The JFSQ is maintained by the Intersecretariat Working Group on Forest Sector Statistics[72] (IWG), which is composed of the Food and Agriculture Organization of the United Nations[73] (FAO), the United Nations Economic Commission for Europe[74] (UNECE), the International Tropical Timber Organization[75] (ITTO) and Eurostat[76]. The different parts of the Questionnaire correlate with CPC Ver. 2.1 (p. 10), HS 2017 (p. 13) and SITC Rev. 4 (p. 12). The definition for recovered post-consumer wood is identical to the FAOSTAT definition (p. 9).

[66] fsc.org/en
[67] fsc.org/en/fsc-labels
[68] fsc.org/en/document-centre/documents/resource/302
[69] fsc.org/en/chain-of-custody-certification
[70] fsc.org/en/document-centre/documents/resource/297
[71] unece.org/jfsq
[72] unece.org/iwg
[73] www.fao.org/home/en/
[74] unece.org/
[75] www.itto.int/
[76] ec.europa.eu/eurostat

PEFC CERTIFICATIONS

The Programme for the Endorsement of Forest Certification [77] (PEFC) is an international non-profit organization that promotes sustainable forest management through national forest certification systems. PEFC international standards are used as a benchmark for national standards.

The Chain of Custody certification [78] (PEFC ST 2002) for forest- and tree-based products lays out the requirements a company must meet to ensure a sustainable supply chain from the source to the final product. For the purpose of the certification, recycled material includes (i) material recovered from waste during a manufacturing process, excluding by-products from primary production, and (ii) material recovered from waste generated by end-users of a product such as households or commercial facilities. For products that include recycled material, the recycled material content must be calculated in order to be granted a PEFC Chain of Custody certification. No due diligence requirements (avoidance of material from controversial sources) are in place for recycled materials. The Guidance for Use [79] by PEFC lists examples of recycled wood products, including construction and demolition debris, packaging wood, pallets and reclaimed defective furniture.

[77] www.pefc.org/
[78] www.pefc.org/for-business/supply-chain-companies
[79] cdn.pefc.org/pefc.org/media/2019-03/079d2e97-1b64-4b49-914f-3c46574f7fcc/209fec3b-a0ae-5c22-a66f-20e9466e417d.pdf

NATIONAL CLASSIFICATIONS

ALBANIA

LEGAL BASIS

The Law on the integrated management of waste[80] (No. 10 463, 2011) constitutes the foundation of Albanian waste regulations and is based on the European Waste Framework Directive (p. 18). The Albanian Waste Catalogue[81] (No. 99, 2005) contains the European List of Waste (p. 15), aligning Albanian classification codes for waste wood with the EU ones.

SECTORAL CLASSIFICATION

Albania has no wood waste classification that is applied in trading or in the wood processing sector. Plywood, particleboard and fiberboard waste is either landfilled or incinerated, depending on the waste management infrastructure in each region. The districts of Elsaban, Fier and Tirana, which possess incinerators, use wood waste for energy recovery (GIZ, 2020). Wood waste from the demolition sector is mostly landfilled.

Source: Dritan Ajdinaj, personal communication, 2020

STATISTICAL CLASSIFICATION

Wood waste is included in the urban waste statistics issued by the Institute of Statistics of Albania[82] (INSTAT), it is not disaggregated further.

[80] www.akm.gov.al/assets/ligji-per-menaxhimin-e-integruar-te-mbetjeve.pdf
[81] extwprlegs1.fao.org/docs/texts/alb67307.doc
[82] www.instat.gov.al/en/

ANDORRA

LEGAL BASIS

The basis for waste regulations in Andorra is the Law on waste[83] (25/2004). It lists waste streams allowed to be landfilled, including wood waste. The Decree on approving the national waste catalogue[84] (2005) adopts the European List of Waste (p. 15).

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Andorran Statistics Department[85] is responsible for compiling waste statistics. In their database[86], waste quantities are available by treatment operation and by some waste streams. No data on wood waste is available.

[83] www.bopa.ad/bopa/017003/Pagines/3A91E.aspx
[84] www.bopa.ad/bopa/017037/Pagines/3CC0E.aspx
[85] www.estadistica.ad/serveiestudis/web/index.asp?lang=1
[86] www.estadistica.ad/serveiestudis/web/index.asp

ARMENIA

LEGAL BASIS

The basis for waste regulations in Armenia is the Law on waste[87] (2004).

Waste classification in Armenia occurs according to the List of production (including subsurface use) and consumption waste generated on the territory of the Republic of Armenia[88] (No. 342-N, 2006). The List includes all types of waste, both hazardous (hazard class 1-4) and non-hazardous waste, indicating their code and manufacture details. Wood waste from the processing of untreated wood is considered non-hazardous waste, whereas wood chips contaminated with organic chemicals (e.g. mineral oils, lacquers, solvents) or other hazardous substances (binders, antiseptics, salts, oils) are assigned to the hazard class 3 or 4.

In addition, the List of hazardous waste of the Republic of Armenia[89] was approved by the Prime Minister in 2004. The List is harmonized with the Basel Convention (p. 10). Wood waste is included there under codes 4501 to 440130, which correspond to code A3080 of the Basel Convention.

Source: Mariam Movsesyan, personal communication, 2021

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Statistical Committee of Armenia[90] is responsible for producing waste statistics. Data on industrial waste is available by treatment operation, by region, by hazard class and by NACE Rev. 2 economic activity (p. 17). For household waste, the amount of waste transported to landfills is indicated[91]. No data is available specifically on wood waste.

[87] www.arlis.am/documentview.aspx?docid=1722
[88] www.arlis.am/DocumentView.aspx?DocID=28220
[89] www.arlis.am/documentview.aspx?docid=12580
[90] armstat.am/am/
[91] armstat.am/file/article/eco_book_2019_10.pdf

AUSTRIA

LEGAL BASIS

The basis for Austrian waste legislation is the Waste Management Act[92] (BGBl. I No. 102, 2002). According to the Act, municipal waste and waste from commercial operations similar to municipal waste (e.g. demolition wood) is managed on provincial level, while all other waste is managed at federal level. Austria uses federal 5-digit waste codes[93] as established by the Austrian Waste Catalogue Ordinance[94] (BGBl. II No. 570/2003).

The Austrian Recycling Wood Ordinance[95] (BGBl. II No. 160/2012, amended version 495/2020) defines 19 categories of wood waste eligible for recycling (Table 3). The Ordinance provides definitions, waste owner obligations, limit values for hazardous chemicals[96], sampling, controls and audits. The Ordinance establishes that the share of wood waste in recycled wood products may increase with decreasing content of hazardous substances.

Table 3: Types of wood waste eligible for recycling in Austria according to the Austrian Recycling Wood Ordinance

Key	Specification	Waste type	Remarks
17101		Bark from treatment and processing	Key number is not to be used for bark for biological recovery according to the quality requirements of the Compost Ordinance, Federal Law Gazette II No. 292/2001
17102		Rind, splinters from untreated, clean, uncoated wood	
17103		Sawdust and sawdust from untreated, clean, uncoated wood	
17104	01 (from) treated wood	Wood sanding dusts and sludges	e.g. from painted or coated wood

[92] www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20002086
[93] secure.umweltbundesamt.at/edm_portal/cms.do?get=/dam/jcr:5aca3a1f-d2fe-411f-9ea0-2ebab0b6cc99/Abfallverzeichnis%202016_01_01.pdf
[94] www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20003077
[95] www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007830
[96] The limit values for recycling wood are as follows (in mg/kg of dry mass): As 1.2 (median), 1,8 (80th percentile); Pb 15 (median), 23 (80th percentile); Cd 0.8 (median), 1.2 (80th percentile); Cr 10 (median), 15 (80th percentile); Hg 0.05 (median), 0.075 (80th percentile); Zn 140 (median), 210 (80th percentile); Cl 250 (median), 300 (80th percentile); F 15 (median), 20 (80th percentile); Polycyclic aromatic hydrocarbons (PAH) 2 (median), 3 (80th percentile).

17104	02 (from) wood demonstrably treated exclusively by mechanical means	Wood sanding dusts and sludges	
17104	03 (from) treated wood, free of harmful substances	Wood sanding dusts and sludges	e.g. from wood treated with linseed oil free of heavy metals
17115		Chipboard waste	Waste from production
17201	01 (from) treated wood	Wooden emballages and wood wastes, not contaminated	e.g. varnished or coated wood
17201	02 (from) wood demonstrably treated exclusively by mechanical means	Wooden emballages and wood wastes, not contaminated	
17201	03 (from) treated wood, free of harmful substances	Wooden emballages and wood wastes, not contaminated	e.g. treated with linseed oil free of heavy metals
17201	04 Waste wood material	Wooden emballages and wood wastes, not contaminated	Wood waste originating from source sorting (e.g. at waste collection centers) or from subsequent state-of-the-art sorting that is suitable for recycling. This specification may also include mixtures of all three specifications 01 through 03, provided they are suitable for recycling.
17202	01 (from) treated wood	Construction and demolition wood	e.g. from varnished or coated wood
17202	02 (from) wood demonstrably treated exclusively by mechanical means	Construction and demolition wood	
17202	03 (from) treated wood, free of harmful substances	Construction and demolition wood	
17202	04 Waste wood material	Construction and demolition wood	Wood waste derived from source sorting (e.g., at waste collection centers or construction sites) or

		from subsequent state-of-the-art sorting that is suitable for recycling. These mixtures may also include all three specifications 01 through 03, provided they are suitable for recycling.
17203	Wood wool, uncontaminated	Wood wool from organically treated or contaminated wood without hazard-relevant properties shall be assigned to Key 17218; wood wool from inorganically treated or contaminated wood without hazard-relevant properties shall be assigned to Key 17212
17218	Wood waste, organically treated (e.g. cured varnish, organic coatings)	e.g. uncontaminated painted and organically coated wood waste (e.g. furniture)
17219	Recycled wood, quality-assured	Key may only be used with valid assessment certificate

Source: Recycling Wood Ordinance

The Recycled Construction Materials Ordinance[97] (BGBl. II No. 181/2015) promotes the recycling of wastes generated during construction and demolition activities through pollutants assessments, recycling-oriented demolition and waste separation duties, including the separate collection of wood waste. The Packaging Ordinance[98] (BGBl. II No. 184/2014), which applies also to wooden packaging, includes a mandatory take-back service and recycling obligations for commercial packaging. The incineration of some types of wood waste[99] is subject to biomass subsidies according to the Austrian Green Electricity Law[100] (BGBl. I No. 75/2011). The Waste Incineration Ordinance[101] (BGBl. II No. 389/2002) implements the European Industrial Emissions Directive (p. 19). It is relevant for the incineration of hazardous wood waste. The Landfill Ordinance[102] (BGBl. II No. 39/2008) contains a landfill ban for waste containing more than 5 weight-% organic carbon. This criterion applies to all wood waste.

SECTORAL CLASSIFICATION

The Austrian Water and Waste Management Association[103] (ÖWAV), a non-profit organization committed to achieving the sustainability goals at national and international level, developed a Guideline for Wood Waste Sorting[104] (2018) with all relevant national stakeholders. The Guideline establishes four wood waste categories (Table 4). At waste collection centers and construction sites sorting at source is encouraged by collecting wood waste destined for recycling and for incineration in two separate containers.

[97] www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20009212
[98] www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20008902
[99] This includes wood waste with the following key numbers: 17104, 17114, 17115, 17202, 17207 and 17209.
[100] www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007386
[101] www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20002239
[102] www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005653
[103] www.oewav.at/
[104] www.oewav.at/Publikationen?current=323523&mode=form

Following the sorting, the components are classified according to the Austrian waste codes.[105]

Table 4: Wood waste categories established by the Guideline for Wood Waste Sorting in Austria

Category	Examples of common components
Wood waste destined for material use	Untreated boards, posts, and roof truss wood, pallets, particleboard, oriented strand board, wooden furniture, clean parquet flooring, untreated wooden packaging
Wood waste destined for energy use	Window frames, doors, impregnated wood, fiberboard, laminated flooring, coated boards, glued parquet flooring, cable drums
Hazardous waste wood	Railway sleepers, poles, workshop floorings, ammunition boxes
Components that are not wood waste	Furniture with less than 50 mass-% wood

Source: ÖWAV, 2018

STATISTICAL CLASSIFICATION

Waste data is based on Electronic Data Management[106] (EDM - waste balances) under the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology[107]. Waste collectors and waste handlers must report data on the type, quantity, origin and disposal of waste as well as any empty waste reports via EDM on the basis of different legal provisions (Section 21 (3) and (4) of the Waste Management Act, Waste Catalogue Ordinance, Waste Incineration Ordinance, Landfill Ordinance) [108]. For a plausibility check of the submitted waste data, further data from the offices of the provincial governments, from other Austrian administration institutions and from interest groups is used[109].

[105] Martin Wurzl, personal communication, 2020
[106] secure.umweltbundesamt.at/edm_portal/home.do
[107] www.bmk.gv.at/en.html
[108] secure.umweltbundesamt.at/edm_portal/cms.do;jsessionid=6F0FE086412C5E9C64DA4F41D0611741?get=/portal/informationen/anwendungenthemen/bilanzen.main
[109] secure.umweltbundesamt.at/edm_portal/cms.do?get=/portal/informationen/daten-zahlen-grafiken.main

AZERBAIJAN

LEGAL BASIS

The basis for waste management regulations is the Law on industrial and household waste [110] (No. 514-IG, 1998, last amended in 2020). Hazardous waste must be accompanied by a passport containing information on its composition and characteristics. No extended producer responsibility is in place.

The national waste classification for all waste types is based on EWC-Stat Rev. 3 (p. 16), with some waste types having been omitted because they do not occur in Azerbaijan. The six-digit classification divides waste into blocks, types, subtypes, groups, subgroups and positions in order to classify the waste by raw materials, production method, treatment method, chemical content and physical form [111]. A transition from EWC-Stat Rev. 3 to Rev. 4 is planned by 2022 [112].

SECTORAL CLASSIFICATION

The Rules of inventory of wastes generated in the production process [113] were put in place in 2008 by the Cabinet of Ministers. According to the Rules, wood waste generated during a production process is described by its source, hazardousness level and amount. Some part of the wood waste may be recycled or sent to other companies for further evaluation. After this initial assessment, information on the hazardousness, chemical substances and toxicity classes for hazardous wood waste are generated. The identification of the waste is supported by waste passports that specify (i) information from other companies with similar types of waste, (ii) information on existing technical documents and (iii) literature information on relevant chemicals surveys.

The type of hazardous waste is identified in accordance with the Basel Convention (p. 10) annexes through the following four main characteristics: type of hazardous waste, amount of hazardous waste, main danger and alternative (parallel) danger. Thus, a classification system with 14 classes is formed based on annex 3 of the Basel Convention, the classes representing different environmental impact levels. “Wood and wood products” are listed under H 6.1 (Highly toxic substances), H 8.0 (Corrosive substances), H 11.0 (Toxic substances) and H 12.0 (Ecotoxic substances). The full list is available in the annex to the Rules of inventory of wastes generated in the production process [114].

STATISTICAL CLASSIFICATION

Waste statistics are based on data collected using three official statistical surveys (on household waste, hazardous waste and medical waste) under the responsibility of the State Statistical Committee [115]. The statistical survey on household waste is completed by the local administrations, while the statistical survey on hazardous industrial waste is completed by companies. The State Statistical Committee publishes yearly waste statistics. Wood wastes are included in the statistical database, but not further disaggregated [116].

[110] www.e-qanun.az/framework/3186
[111] ict.az/uploads/konfrans/soft_eng/25.pdf
[112] eni-seis.eionet.europa.eu/east/areas-of-work/data/Annex3AzerbaijanCountryFactSheetFeb2018.pdf
[113] extwprlegs1.fao.org/docs/pdf/aze160214.pdf
[114] extwprlegs1.fao.org/docs/pdf/aze160214.pdf
[115] www.stat.gov.az/?lang=en
[116] eni-seis.eionet.europa.eu/east/areas-of-work/data/Annex3AzerbaijanCountryFactSheetFeb2018.pdf

BELARUS

LEGAL BASIS

The Classifier of waste generated in the Republic of Belarus[117] (No. 021-2019) is aligned with the Russian waste classification (p. 78). The Classifier is part of the Belarus National Strategy for the management of solid municipal waste and secondary material resources until 2035[118]. Wood waste is included in block 1 ("plant and animal waste"), section 7 ("wood waste"). The seven-digit wood waste codes therefore all have the form 17 X XX XX.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Ministry of Natural Resources and Environmental Protection[119] collects the data on industrial waste, called form 1[120] waste, through statistical reporting forms. These are submitted by the legal entities from industry actors in agriculture, forestry, fishing and construction. The Ministry of Housing and Utilities[121] collects the data on municipal solid waste and secondary raw materials[122], including those recovered from municipal solid waste (Shershunovich & Tochitskaya, 2018). The National Statistical Committee[123] is responsible for aggregating and publishing all waste data[124].

[117] pravo.by/upload/docs/op/W21934631p_1569531600.pdf
[118] www.mjkx.gov.by/uploaded/2018/BMP2035.pdf
[119] www.minpriroda.gov.by/en/
[120] www.minpriroda.gov.by/uploads/files/Postanovlenie-Natsionalnogo-statisticheskogo-komiteta.rtf
[121] www.mjkx.gov.by/
[122] base.spinform.ru/show_doc.fwx?rgn=122433
[123] www.belstat.gov.by/en/
[124] www.belstat.gov.by/ofitsialnaya-statistika/makroekonomika-i-okruzhayushchaya-sreda/okruzhayuschaya-sreda/sovmestnaya-sistema-ekologicheskoi-informatsii2/i-othody/i-1-obrazovanie-othodov/

BELGIUM

LEGAL BASIS

In Belgium, the responsibility for waste management lies with the regions. The three regions have each implemented the European List of Wastes (p. 15) into regional law:

- Brussels-Capital: Decree of the Government of the Brussels-Capital Region relating to waste management [125] (2016),
- Flanders: Decree of the Flemish Government establishing the Flemish regulation on the sustainable management of material cycles and waste [126] (2012),
- Wallonia: Order of the Walloon Government establishing a waste catalogue [127] (1997).

A landfill ban is in place for combustible waste, including wood waste, since 2000 in Flanders and 2004 in Wallonia [128]. There are no landfills in the Brussels-Capital region. The incineration of hazardous wood waste is regulated under the European Industrial Emissions Directive (p. 19), that has been transposed into regional laws in 2013 [129]. In Flanders, biomass that has been classified as a material for production may be incinerated but is excluded from receiving subsidies [130].

SECTORAL CLASSIFICATION

The waste trade classification follows the German (p. 49) and UK (p. 92) classification of four wood waste categories. For material recovery, the pre-sorted wood waste is sold to the panel industry and further sorted at panel production plants following criteria based on the EPF Standard (p. 20). The furniture industry possesses on-site biomass incinerators for non-hazardous wood waste. Incineration occurs according to the EPF Standards. Sampling procedures are prescribed in the environmental permits.

Source: Piet Vanthournout, personal communication, 2020

STATISTICAL CLASSIFICATION

The Belgian statistical office Statbel [131] compiles waste statistics based on surveys, administrative data from the regions (Environment and Energy Agency of Brussels-Capital [132]; Public Waste Agency of Flanders [133]; Operational Directorate General Agriculture, Natural Resources and Environment of Wallonia [134]) and models. Moreover, Statbel is responsible for reporting to Eurostat. Data on non-hazardous and hazardous wood waste is available by NACE Rev. 2 (p. 17) economic activity [135].

[125] www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=fr&la=F&table_name=loi&cn=2016120133
[126] navigator.emis.vito.be/mijn-navigator?woId=44696
[127] environnement.wallonie.be/legis/dechets/decat026.htm
[128] www.cewep.eu/wp-content/uploads/2017/12/Landfill-taxes-and-bans-overview.pdf
[129] www.dentons.com/en/-/media/9c346dd46cc64577a1ef9c4073c69e2b.ashx
[130] Piet Vanthournout, personal communication, 2020
[131] statbel.fgov.be/en
[132] environnement.brussels/
[133] www.ovam.be/
[134] environnement.wallonie.be/
[135] statbel.fgov.be/en/themes/environment/waste-and-pollution/waste-production#figures

BOSNIA AND HERZEGOVINA

LEGAL BASIS

In Bosnia and Herzegovina (BiH) the legal framework for waste policy are: the Law on Waste Management of the Federation of Bosnia and Herzegovina [136] (No. 33, 2003), the Law on Waste Management of Republika Srpska [137] (No. 111, 2013) and the Brcko District Law on Waste management [138] (No. 25, 2004).

Since 2000 the municipal waste management sector in BiH has been under reform to align with the policy framework of the European Union (EU). Both BiH entities (Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS)) and Brcko District (BD) have prepared Waste Management Strategies and FBiH also prepared a Waste Management Plan for implementation.

The Solid Waste Management (SWM) legal framework is guided by the Law on Waste Management in each BiH entity, which promotes the principles of waste hierarchy, polluter pays and producer responsibility. FBiH, RS and BD have each prepared Waste Management Strategies (FBiH up to 2018 and RS and BD up to 2026) promoting further harmonization of legislation with EU directives, regionalization of disposal, introduction of waste separation at source, and the creation of sustainable waste management systems.

The institutional architecture of the SWM sector is divided among (i) State level with the Ministry of Foreign Trade and Economic Relations [139] (MoFTER) as the overall coordinator of all activities, and the government institutions including the Agency for Statistics of BiH [140], (ii) the BiH entity level: the Ministry of Environment and Tourism [141] in FBiH and the the Ministry for Spatial Planning, Civil Engineering and Ecology [142] in RS (iii) the cantonal level, including the 10 Cantons in FBiH and (iv) the local level consisting of about 143 municipalities.

SECTORAL CLASSIFICATION

The Institute for Standardization of BiH [143] is a state institute which adopts EN and ISO standards (p. 9), including for round and sawn wood. Virgin wood is classified into four classes with the following general quality conditions [144]:

- Quality class A: First class quality wood. Mostly the first log of pure wood, without defects or with minor defects and a few restrictions on use.
- Quality class B: Wood of average to first-class quality, without specific requirements for pure wood. Bumps are allowed to an extent considered average for a particular species. Transition from JUS to BAS EN standards of forest wood assortments in BiH
- Quality class C: Wood of average to low quality. All quality characteristics that do not significantly impair the natural characteristics of the wood are allowed.

[136] www.fmoh.gov.ba/index.php/zakoni-i-strategije/zakoni/zakon-o-upravljanju-otpadom
[137] www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mgr/PAO/Documents/Zakon%20o%20uprvaljanju%20otpadom.pdf
[138] www.podaci.net/_gBiH/propis/Zakon_o_upravljanju/Z-uotpad05v0425-0909.html
[139] www.mvteo.gov.ba/?lang=en
[140] www.bhas.ba/?lang=en
[141] www.fmoit.gov.ba/
[142] www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mgr/Pages/default.aspx
[143] isbih.gov.ba/en
[144] www.sumari.hr/hodic/jusenbihmar13.pdf

- Quality class D: Wood that can be sawn into usable wood, but due to its characteristics cannot enter quality class A, B or C.

Source: Ševala Korajčević, personal communication, 2021

STATISTICAL CLASSIFICATION

Data on the generation and treatment of waste is collected based on the European Waste Statistics Regulation (p. 19). The information on waste generation has a breakdown in sources (19 business activities according to the NACE Rev. 2 classification, p. 17, and household activities) and in 51 waste categories (according to EWC-Stat). The information on waste treatment is broken down to five treatment types (recovery, incineration with energy recovery, other incineration, disposal on land and land treatment) and in waste categories. Data on municipal waste is collected through statistical surveys that are adapted to international standards and national needs in the area of waste statistics:

- Annual survey on municipal waste collectors (survey KOM-6aS)
- Annual survey on waste brought to landfill sites (survey KOM-6aD)- including the amount of waste that citizens brought to landfills
- Annual survey on collected waste from production and service activities (OTP)
- Annual survey on waste recycling/disposal (OTP-P)

Municipal waste information consists of three data sets: generation of waste, treatment of waste and waste treatment facilities. The data set on the generation of waste is broken down into waste categories and the source of waste generation; the data set on the treatment of waste is broken down into the type of treatment and waste category. The dataset on waste treatment facilities is broken down into the measurement variable (number of facilities, capacity).

The generation of waste is attributed to either production or consumption activities. The actor handing over the waste to the waste management system is regarded as the source. For production activities a further breakdown is supplied in 18 economic activities according to the NACE Rev. 2 classification. Three of these activities are linked to the waste management and will contain secondary waste: Waste collection, treatment and disposal activities; materials recovery (division 38), Remediation activities and other waste management services (division 39) and Wholesale of waste and scrap (class 46.77).

Bosnia and Herzegovina, by the Law on Customs Tariff of BiH[145] (No. 58, 2012), Article 2, accepted the Harmonized System classification. The tariff code of the Customs Tariff of BiH has ten digits. The seventh and the eighth digit are harmonized with the Combined Nomenclature classification of the European Union, while the ninth and tenth digits serve for the needs of further analysis within the specific needs of BiH.

[145] www.paragraf.ba/propisi/bih/zakon-o-carinskoj-tarifi.html

BULGARIA

LEGAL BASIS

The basis for waste regulations in Bulgaria is the Waste Management Act[146] (No. 53, 2012). The Ordinance on the classification of waste[147] (No. 2, 2014) transposes the European List of Waste (p. 15) into Bulgarian law. Wooden packaging waste is subject to a recycling target of 30% according to the Ordinance on packaging and packaging waste[148] (No. 271, 2012). The Ordinance for construction waste management[149] (No. 277, 2012) imposes an 80 % recycling target for wood waste (LoW code 17 02 01) generated during road and railway construction.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

Waste data is reported via the National Waste Information System[150] since January 2021, which is maintained by the Executive Environment Agency[151]. Statistics are produced by the National Statistical Institute[152] through a combination of surveys and the data reported to the Executive Environment Agency[153]. Wood waste quantities by recovery and disposal operations as well as quantities of hazardous wood waste are available on the website of the National Statistical Institute[154].

[146] www.lex.bg/laws/ldoc/2135802037
[147] www.lex.bg/laws/ldoc/2136291129
[148] www.lex.bg/laws/ldoc/2135820133
[149] www.lex.bg/laws/ldoc/2135821177
[150] nwms.eea.government.bg/app/base/home
[151] eea.government.bg/
[152] www.nsi.bg/bg
[153] www.nsi.bg/bg/content/2556/%D0%BE%D1%82%D0%BF%D0%B0%D0%B4%D1%8A%D1%86%D0%B8-%D0%BE%D1%82-%D0%B4%D0%B5%D0%B9%D0%BD%D0%BE%D1%81%D1%82%D1%82%D0%B0
[154] www.nsi.bg/bg

CANADA

LEGAL BASIS

The responsibility for waste laws and regulations lies with the provincial and territorial authorities (Giroux, 2014). Canada has no official nation-wide wood waste classification.

SECTORAL CLASSIFICATION

In 2019 the Canadian Council of Ministers of the Environment[155], composed of the environment ministers from the federal, provincial and territorial governments, released a Guide for identifying, evaluating and selecting policies for influencing construction, renovation and demolition waste management[156]. It classifies wood waste according to its contamination level: Clean – Engineered – Painted – Treated (Table 5).

Table 5: Wood waste categories in Canada according to the Council of Ministers of the Environment

Wood waste category	Description
Clean wood waste	Clean wood (also known as white wood) is not treated with chemicals (e.g., for pressure treatment), paint or other coatings. It includes solid wood, lumber, and pallets that are unpainted, unstained, untreated and free of glue.
Engineered wood waste	Engineered (composite) wood refers to manufactured plywood, particleboard, medium-density fiberboard, oriented strand board, veneers, glulam beams, etc., which may include nails, metal plates, glues and other chemicals.
Painted wood waste	Painted wood contains a coating (e.g., paint, varnish, sealer, stain) applied onto or impregnated into clean, engineered or treated wood. It includes trim, doors, cabinets, flooring, some siding, balustrades and baseboards. Some painted wood may contain hazardous or toxic substances and because it may be difficult to test the type of paint, it is usually not possible to divert from landfill.
Treated wood waste	Treated wood refers to wood that is pressure treated or coated with wood preservatives to protect it against decay, mould and insects. It includes fencing and wood for exterior applications, marine pilings, railway ties, and products that have been treated with stains or preservatives. Similar to painted wood waste, options for diverting treated wood waste from landfill are extremely limited.

Source: Canadian Council of Ministers of the Environment, 2019

[155] www.ccme.ca/index.html
[156] www.ccme.ca/files/Resources/waste/wst_mgmt/CRD%20Guidance%20-%20secured.pdf

STATISTICAL CLASSIFICATION

Statistics Canada[157], the national statistical office, is responsible for collecting and publishing waste statistics. Waste data on collection, disposal and recycling quantities is collected through mandatory waste management industry surveys[158]. No data is specifically available for wood waste.

[157] www.statcan.gc.ca/eng/start

[158] www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=1736, www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=2009

CROATIA

LEGAL BASIS

The basis of Croatian waste regulations is the Law on Sustainable Waste Management[159] (2020). Article 12 of the Law adopts the European List of Waste (p. 15). While Article 54 lists the waste streams to be separately collected, wood is not part of them.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The waste management information system e-ONTO[160] contains data on waste flows reported by waste collectors and is managed by the Ministry of Economy and Sustainable Development[161]. The ministry publishes waste statistics and is responsible for reporting to Eurostat[162]. No data on wood waste is available there[163].

[159] www.zakon.hr/z/657/Zakon-o-odr%C5%BEivom-gospodarenju-otpadom
[160] eonto.azo.hr/#/Ulaz
[161] www.haop.hr/hr
[162] www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/gospodarenje-otpadom-10
[163] www.haop.hr/sites/default/files/uploads/dokumenti/021_otpad/Izvjesca/OTP_Pregled%20podataka%20o%20gospodarenju_otpadom%20u%20RH_iz_PGO.pdf

CYPRUS

LEGAL BASIS

The basis for waste regulations in Cyprus is the Waste Law[164] (185 (I)/2011, last amended in 2016) which transposes the European Waste Framework Directive (p. 18) into national law. The Packaging and Packaging Waste Law[165] (32 (I)/2002, last amended in 2019) includes an extended producer responsibility for packaging waste and a 15% recycling target for wooden packaging.

Green Dot Cyprus, a non-profit Organization established by distributors, packaging manufacturers and the Cyprus Chamber of Commerce and Industry, is responsible for the separate collection of waste streams including wood waste (Zorpas *et al*., 2017).

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Statistical Service[166] of Cyprus is responsible for publishing waste statistics. The data collection includes administrative data by waste treatment centers and data from surveys for municipal authorities and companies involved in the generation or treatment of industrial waste[167]. Municipal solid waste quantities are available by treatment method and type of waste, including recycled wood waste. Industrial waste is disaggregated by NACE Rev. 2 economic activity (p. 17), by hazardousness and by treatment operation.

[164] www.cylaw.org/nomoi/enop/non-ind/2011_1_185/full.html
[165] www.cylaw.org/nomoi/enop/non-ind/2002_1_32/full.html
[166] www.mof.gov.cy/mof/cystat/statistics.nsf/index_en/index_en?OpenDocument
[167] www.mof.gov.cy/mof/cystat/statistics.nsf/all/1C7025DDE120214DC22576EF002D8390?OpenDocument

CZECHIA

LEGAL BASIS

In Czechia, the basis for waste regulations is the Waste Act[168] (No. 541/2020) which implements the European Waste Framework Directive (p. 18). The Decree on the catalogue of wastes[169] (No. 93/2016) contains the European List of Waste (p. 15), aligning the Czech waste classification with the EU one.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Waste Management Information System[170] is maintained by the Ministry of the Environment[171]. It operates with LoW codes and is used to collect waste management data. The comprehensive System also contains public information on waste production and management[172]. Waste statistics are available by waste group, by hazardousness, by region, by treatment operation. Wood waste data is included, but nor further disaggregated.

[168] www.zakonyprolidi.cz/cs/2020-541
[169] www.zakonyprolidi.cz/cs/2016-93
[170] isoh.mzp.cz/
[171] www.mzp.cz/en
[172] isoh.mzp.cz/VISOH/Main/OVisoh

DENMARK

LEGAL BASIS

The Danish Order on Waste[173] (No. 224, 2019, amended in 2021) is the basis for waste regulations in Denmark. Annex 2 of the Order contains the European List of Waste (p. 15), aligning the Danish to the EU classification. Chapter 7, Articles 34 and 35 of the Order define admissible treatments for creosote-treated wood (which may be incinerated with energy recovery) and impregnated wood (which shall be deposited and may be incinerated following a specific assessment).

Moreover, the Order on the Waste Data System[174] (No. 1742, 2018) establishes a classification of waste fraction codes for statistical reporting. Municipal waste is described with H codes, while commercial waste is described with E codes. There, the following wooden waste fractions are distinguished: wood (H15 and E15), wooden packaging (H30 and E32), and impregnated wood (H16 and E16).

SECTORAL CLASSIFICATION

Municipalities generally classify wood waste according to the German classification (p. 49).

STATISTICAL CLASSIFICATION

Data on waste quantities from collectors, recipients, importers and exporters of waste is collected through the Waste Data System[175]. The Environmental Protection Agency[176] processes the data and publishes waste statistics. Wood waste quantities and treatment methods are available by H and E codes[177].

[173] www.retsinformation.dk/eli/lta/2019/224
[174] www.retsinformation.dk/eli/lta/2018/1742
[175] mst.dk/affald-jord/affald/affaldsdatasystemet/
[176] mst.dk/service/om-miljoestyrelsen/
[177] www2.mst.dk/Udgiv/publikationer/2020/12/978-87-7038-249-6.pdf

ESTONIA

LEGAL BASIS

The basis for waste regulations in Estonia is the Waste Act[178] (RT I, 9, 52, 2004) that implements the EU Waste Framework Directive (p. 18). The Regulation on the waste classification procedure and waste list[179] (No. 70, 2015) adopts the European List of Waste (p. 15), aligning the Estonian waste classification to the EU one. The Packaging Act[180] (RT I, 41, 278, 2004) establishes a recovery target of 45% and a recycling target of 20% for wooden packaging waste.

SECTORAL CLASSIFICATION

Post-consumer wood waste is usually incinerated in district Combined Heat and Power (CHP) plants or heat plants. Wood waste is not landfilled or used for material recovery. By-products from the wood-processing industry are directly reused, thus, in principle, no wood waste is generated there.

Source: Madis Raudsaar, personal communication, 2021

STATISTICAL CLASSIFICATION

Waste statistics are based on waste reports submitted by holders of waste permits, waste handlers and waste generators who generate more than 10 tons of non-hazardous waste or more than 100 kg of hazardous waste. Reports are submitted through the Waste Reporting Information System[181] managed by the Environment Agency[182]. Detailed data on wood waste can be retrieved from the Waste Reporting Information System[183] by LoW code. Aggregated waste statistics[184] are produced by the Statistics Estonia[185], the Estonian statistical office.

[178] www.riigiteataja.ee/en/eli/ee/521122020002/consolide/current
[179] www.riigiteataja.ee/akt/118122015014?leiaKehtiv
[180] www.riigiteataja.ee/en/eli/ee/524102014004/consolide/current
[181] jats.keskkonnainfo.ee/main.php?public=1
[182] www.keskkonnaagentuur.ee/en
[183] jats.keskkonnainfo.ee/main.php?public=1
[184] www.stat.ee/en/find-statistics/statistics-theme/environment/waste-and-circular-economy
[185] www.stat.ee/en

FINLAND

LEGAL BASIS

The Finnish Waste Act[186] (No. 646, 2011), which constitutes the basis for waste law, is currently under review[187] (December 2020). Annex 4 of the Government decree on waste[188] (No. 179/2012) contains the European List of Waste (p. 15), aligning Finnish classification codes for waste wood with the EU ones.

SECTORAL CLASSIFICATION

The State Technical Research Center[189] (VTT) has published guidelines for classifying post-consumer wood intended for energy use (Alakangas *et al.*, 2015), approved by the Ministry of the Environment and industry associations. Post-consumer wood for energy use is divided into four classes (Table 6).

Table 6: Wood waste classes in Finland according to the State Technical Research Center guidelines

Class	Definition	Standard and requirements	Examples of wood wastes
A	Virgin wood, only mechanically treated	ISO 17225-1 Solid Biofuels[190]; proof of the origin and source required	Construction wood, by-products and residues from wood processing industry
B	Chemically treated non-hazardous wood waste, excluding demolition wood	ISO 17225-1 Solid Biofuels[191]; proof of the origin and source required	Boards, plywood, pallets, by-products and residues from wood processing industry
C	Wood waste containing organic halogenated compounds or heavy metals above threshold values[192]	DIN EN 15359–Solid Recovered Fuels[193]	Demolition wood
D	Preservative-treated, hazardous wood waste	-	Railway sleepers, transmission and telephone line poles

Source: Alakangas *et al.*, 2015

[186] finlex.fi/fi/laki/kaannokset/2011/en20110646_20140528.pdf
[187] www.hannessnellman.com/news-views/blog/reform-of-waste-legislation-in-finland-a-step-towards-circular-economy/
[188] www.finlex.fi/en/laki/kaannokset/2012/en20120179.pdf
[189] www.vttresearch.com/en
[190] www.iso.org/obp/ui/#iso:std:iso:17225:-1:en
[191] www.iso.org/obp/ui/#iso:std:iso:17225:-1:en
[192] Threshold values are as follows: S 0.2 w-%; N 0.9 w-%, Cl 0.1 w-%; As+Cr+Cu 70 mg/kg; Cd 1 mg/kg; Hg 0.1 mg/kg; Pb 50 mg/kg; Zn 200 mg/kg. Virgin wood is taken as reference for the threshold values.
[193] www.din.de/de/mitwirken/normenausschuesse/nmp/veroeffentlichungen/wdc-beuth:din21:134729762

Class B wood incineration falls under the Emission Trading Scheme[194] (2012/601/EU) because of fossil components (e.g. glues), meaning that CO_2 factors should be stated. Wood falling into class C are incinerated according to the Finnish Waste Incineration Act[195] (No. 151/2013). Class D wood waste is classified as hazardous waste. Finnish companies dealing with used wood started to apply this classification since the publication of the first version of the VTT guidelines in 2008.

STATISTICAL CLASSIFICATION

The YLVA database[196] is the monitoring system for the Finnish environmental administration. Companies that hold an environmental permit report their annual waste data to the YLVA database. It serves as the primary information source for Statistics Finland[197], the government body collecting official statistics. The database operates with LoW codes as well as the European recovery and disposal codes (Liikanen *et al.*, 2018). Statistics Finland publishes yearly data on municipal wood waste by treatment method[198].

[194] eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32012R0601&from=EN
[195] www.finlex.fi/en/laki/kaannokset/2011/en20110646.pdf
[196] www.ymparisto.fi/fi-FI/Kartat_ja_tilastot/Tietojarjestelmat/Ymparistonsuojelun_valvonnan_sahkoinen_asiointijarjestelma_YLVA/Toiminnanharjoittajien_sahkoinen_raportointi
[197] stat.fi/index_en.html
[198] pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/

FRANCE

LEGAL BASIS

The French basic waste law consists of articles L. 541-1 to 541-50 (legislative section) and R. 541-7 to 541-97 (regulatory section) of the Environment Code[199] (Ordinance No. 2000-914). Article R. 541-7 refers to the European List of Waste (p. 15), aligning French classification codes for waste wood with the EU ones. According to article L. 541-2, any industrial waste producer or waste holder can only dispose to landfill "ultimate waste", which can no longer be re-used or recovered in the current technical and economic conditions.

The French Energy Transition Law for Green Growth[200] (Law No. 2015-992) encourages the reduction of waste at all stages of the value chain. Since 2016, the so-called "5 Streams" Decree[201] of the Energy Transition Law (Decree No. 2016-288) requires producers and holders of paper, metal, plastic, glass and wood waste to separate these streams from the rest of their waste for reuse or recovery. These waste streams can be stored and collected separately or mixed with each other. The producer or holder of waste can either carry out the recovery himself or hand over the waste to an intermediate operator, or the operator of a recovery, or to a recycling facility. This regulation comes in addition to the Extended Producer Responsibility (EPR; Article L. 541-10 Environment Code, 1975), which is currently under review (December 2020)[202]. Another development is the Anti-waste and Circular Economy Law[203] (Law No. 2020-105) which seeks an in-depth transformation of the economy through combatting waste and promoting solidarity-based reuse, among other goals.

Part of the EPR is a mandatory take-back service for construction waste (Article R. 543-288 to 290, Environment Code). Any distributor of construction materials, products and equipment intended for professional users who operates a store of at least 400 square meters and whose annual revenue is of at least 1 million euros, must provide this service.

According to the French Building and Housing Code[204] (Decrees No. 78-621 and 78-622) - Article R. 111-43 to 49, construction sites must conduct a survey of waste resulting from the demolition of buildings with a floor area greater than 1,000 m² and buildings used for agricultural, industrial or commercial activity in the presence of hazardous chemical substances.

SECTORAL CLASSIFICATION

The Facilities Classified for Environmental Protection (ICPE) regulation of the French National Institute for Industrial Environment and Risks[205] (Ineris) provides a classification system of industrial sites based on what type of pollution or other environmentally harmful effects they may have on the surrounding area. In this regulation, Section 2910 includes a classification of wood waste (Table 7).

[199] www.legifrance.gouv.fr/codes/texte_lc/LEGITEXT000006074220/
[200] www.legifrance.gouv.fr/jorf/id/JORFTEXT000031044385/
[201] www.legifrance.gouv.fr/jorf/id/JORFTEXT000032187830/
[202] blog.complianceandrisks.com/news-resources/france-opens-consultation-on-extended-producer-responsibility
[203] www.legifrance.gouv.fr/jorf/id/JORFTEXT000041553759
[204] www.legifrance.gouv.fr/codes/texte_lc/LEGITEXT000006074096/
[205] www.ineris.fr/en

The Heat Fund for the Biomass Energy Sector [206] by the Agency for the Ecological Transition (ADEME) classifies four types of wood fuels, among which type 3 (end-of-life and waste wood) consists of four sub-categories harmonized with the ICPE classification (Table 7).

Table 7: ICPE wood waste categories in France and correspondence with the French ADEME Heat Fund classification

ICPE classification	ADEME classification	Definition	Examples of common types of wood waste
2910-A	3-A	Unpainted and untreated wood to be used as biomass fuel	SSD [207] packaging wood, pallets, planks
2910-B	3-B	Wood treated with low-concentration chemical additives below limit value concentrations [208]	Non-SSD packaging wood, furniture and carpentry wood waste, wood from demolition
2771	3-C	Wood treated with low-concentration chemical additives above limit value concentrations	Non-SSD packaging wood, furniture and carpentry wood waste, wood from demolition
2770	3-D	Treated and hazardous wood waste	Railway sleepers, electric poles

Source: ADEME, 2018; Reindahl Andersen *et al.*, 2018

Moreover, the Interprofessional Committee on Wood Energy [209] (CIBE) classifies shredded wood for incineration into five classes according to grain size and moisture content [210].

STATISTICAL CLASSIFICATION

Statistical data on waste is collected by the Data and Statistical Studies Department [211] (SDES) of the Ministry for the Ecological Transition [212]. The SDES collects, develops and disseminates statistical information related to the topics of housing, construction, transportation, energy, environment and sustainable development. Moreover, the SDES is responsible for reporting to Eurostat. Data on waste quantities is collected through a "survey of waste and excavated material produced by the construction and public works sector" [213]. In the survey, inert waste, non-inert non-dangerous waste and dangerous waste categories are distinguished. There, wood waste appears

[206] www.ademe.fr/sites/default/files/assets/documents/fiche-descriptive-eligibilite-filiere-biomasse-energie-fonds-chaleur-fev2020.pdf
[207] SSD = Waste Status Removed. This is the condition for burning wood chips as biomass fuel. For more information: www.fnbois.com/palettes-palox-et-caisses-palettes/sortie-de-statut-de-dechets/
[208] The limit value concentrations (in mg/kg dry matter) for hazardous substances are as follows: As 4; Pb 50; Cd 5; Cr 30; Cu 30; Hg 0.2; Cl 900; Zn 200; PCP 3; PCBs 2. PCP = phenylcyclohexyl piperidine
[209] cibe.fr/
[210] www.ademe.fr/sites/default/files/assets/documents/fiche4-classification-combustible-bois-energie-cibe-010367.pdf
[211] www.statistiques.developpement-durable.gouv.fr/
[212] www.ecologie.gouv.fr/
[213] www.statistiques.developpement-durable.gouv.fr/enquete-sur-les-dechets-et-deblais-produits-par-lactivite-btp-en-2014-edd-2014

as “raw wood or wood treated with non-hazardous substances (pallets, wood A, wood B, etc.)” in the category non-inert non-dangerous waste, and as “wood with dangerous substances” in the category of dangerous waste.

GEORGIA

LEGAL BASIS

The basis for waste regulations in Georgia is the Waste Management Code[214] (No. 2994, 2014) that includes waste collection, transportation, recovery and disposal as well as obligations on waste management planning, accounting, issuance of permits, registrations and control. The Resolution on determining list and classifying waste according to types and characteristics[215] (No. 426, 2015) adopts the European List of Waste (p. 15), aligning the Georgian to the EU classification.

SECTORAL CLASSIFICATION

Wood waste is most commonly classified into (i) waste from wood processing and production of panels and furniture, (ii) residual bark and cork and (iii) sawdust, wood shavings, cuttings (trims), wood materials, plywood and veneers containing hazardous substances. Several activities regarding an improved wood waste management are planned by the Ministry of Environmental Protection and Agriculture[216].

Source: Gigia Aleksidze, personal communication, 2021

STATISTICAL CLASSIFICATION

The National Statistics Office[217] produces waste statistics based on data collected by the Ministry of Environment Protection and Agriculture[218]. There, no data is available for wood waste in particular[219].

[214] matsne.gov.ge/ka/document/view/2676416?publication=11
[215] matsne.gov.ge/ka/document/view/2952265?publication=0
[216] mepa.gov.ge/En/
[217] www.geostat.ge/en
[218] mepa.gov.ge/
[219] www.matsne.gov.ge/ka/document/download/4720099/0/2

GERMANY

LEGAL BASIS

The foundation of German waste regulations is the Circular Economy Law[220] (BGBl. 1 2012, 212) that transposes the European Waste Framework Directive (p. 18) into national law. The recovery and disposal of wood waste is regulated by the Waste Wood Ordinance[221] (BGBl. I 2002, 3302). The Ordinance contains a classification with four categories (Table 8). Furthermore, the Annex to the Waste Catalogue Ordinance[222] (BGBl. I 2001, 3380 – 3406) contains the European List of Waste, aligning German classification codes for waste wood with the EU ones (p. 15).

Table 8: Waste wood categories in Germany according to the Waste Wood Ordinance

Cat.	Definition	Examples of common types of wood waste
AI	Waste wood in its natural state or only mechanically processed which, during use, was at most insignificantly contaminated with substances harmful to wood	Cuttings or shavings from solid wood in its natural state; palettes made from solid wood (e.g. Europalettes); boxes for fruit and vegetables; cable reels made from solid wood (made after 1989); waste wood in its natural state from building sites; furniture or solid wood in its natural state
AII	Bonded, painted, coated, lacquered or otherwise treated waste wood with no halogenated organic compounds in the coating and no wood preservatives	Palettes made from derived timber products; particleboard used in construction; furniture with no halogenated organic compounds in the coating
AIII	Waste wood with halogenated organic compounds in the coating, with no wood preservatives	Particleboards with halogenated organic compounds; palettes with halogenated composite material; furniture with halogenated organic compounds in the coating; mixed bulky wood waste
AIV	Waste wood treated with wood preservatives as well as other wood waste which, due to its contamination, cannot be assigned to waste categories AI, AII or AIII, with exception of waste wood containing PCBs	Railway sleepers; telephone masts; hop poles; vine poles; cable reels made from solid wood (made before 1989); ammunition boxes; waste wood from damaged structures (e.g. burnt wood)
Wood waste	Waste wood which constitutes waste wood containing PCBs	Insulating boards and sound insulating boards treated with agents containing PCBs

[220] www.gesetze-im-internet.de/krwg/BJNR021210012.html
[221] www.gesetze-im-internet.de/altholzv/AltholzV.pdf
[222] www.gesetze-im-internet.de/avv/anlage.html

containing PCBs	within the meaning of the PCB/PCT Waste Ordinance[223]

Sources: Annex III Waste Wood Ordinance; Reindahl Andersen *et al.*, 2018

When a mixture of wood waste contains hazardous components, the entire mixture is considered hazardous. In the Waste Wood Ordinance, recycling and energy recovery are ranked equally in terms of the waste hierarchy. Waste wood of category AI and AII is generally admissible for material use. Waste wood of category AIII is admissible under the condition that halogenated paints and coatings are largely removed (either during pre-treatment or during the recycling process itself). Limit values for wood chips destined to be used in wood-based materials are defined in Annex II of the Waste Wood Ordinance[224]. The Waste Wood Ordinance is currently under review (December 2020). In addition, the Packaging Act[225] (BGBl. I 2017, 2234) implements the European Packaging and Packaging Waste Directive (p. 18) and sets a recycling rate of at least 15 mass-% for wood from packaging. The Commercial Waste Ordinance[226] (BGBl. I 2017, 896) contains the duty of producers and owners of commercial municipal waste and construction and demolition waste to give priority for preparation for reuse or recycling.

Requirements for incineration are laid out in the Federal Emission Control Act[227] (BGBl. I 2002, 3830) that is harmonized with the European Industrial Emissions Directive (p. 19).

SECTORAL CLASSIFICATION

Germany has a well-established collection system of wood waste. While waste from households can be disposed of at civic amenity sites or bulky waste collection, demolition waste is collected in containers on site and transported to recycling/disposal partners. The separate collection and transport of different commercial municipal waste fractions, including wood, is regulated under the Commercial Waste Ordinance. Commercial municipal waste is defined as municipal waste of origin other than private households. This category includes commercial and industrial waste as well as waste from private and public institutions that is similar to waste from private households due to its nature or composition. For these waste streams, priority shall be given to re-use and recycling. Mixtures of construction and demolition waste, which contain plastics, metals (including alloys) or wood, must go through a pre-treatment. Wood separated in pre-treatment plants is disposed of according to the requirements of the Waste Wood Ordinance.

In practice, the types of waste wood classified as AIII wood exceed the legal definition (Table 8). Waste wood that does not comply with the limit values for recycling is routinely classified as AIII wood[228].

The German Institute for Standardization[229] (DIN) supports the circular use of wood and wood products through a Standards Committee on Wood and Furniture[230]. The committee's current areas of work include concepts for the further use of furniture and its components, product labelling and prolonging of products' service life.

[223] www.gesetze-im-internet.de/pcbabfallv/BJNR093210000.html. PCT = polychlorinated terphenyl
[224] The limit value concentrations (in mg/kg dry matter) for hazardous substances are as follows: As 2; Pb 30; Cd 2; Cr 30; Cu 20; Hg 0.4; Cl 600; Fl 100; PCP 3; PCBs 5. PCB = Polychlorinated Biphenyl. PCP = Pentachlorophenol.
[225] www.gesetze-im-internet.de/verpackg/BJNR223410017.html
[226] www.gesetze-im-internet.de/gewabfv_2017/BJNR089600017.html
[227] www.gesetze-im-internet.de/bimschg/BJNR007210974.html
[228] Anemon Strohmeyer and Martin Loebs, personal communication, 2020
[229] www.din.de/en
[230] www.din.de/de/forschung-und-innovation/themen/circular-economy/anwenden/holz

STATISTICAL CLASSIFICATION

Waste statistics are issued by Destatis[231], the Federal Statistical Office of Germany, following the requirements of the Environmental Statistics Law[232] (BGBl. I 2005, 2446). Data on wood waste (EWC-Stat code 07.5) is divided into hazardous and non-hazardous. Wood waste quantities are provided by economic activity as laid out in the German Classification of Economic Activities[233] (WZ 2008) that is based on the European NACE Rev. 2 classification (p. 17).

[231] www.destatis.de/EN/Home/_node.html
[232] www.gesetze-im-internet.de/ustatg_2005/BJNR244610005.html
[233] www.klassifikationsserver.de/klassService/jsp/variant/variantList.jsf

GREECE

LEGAL BASIS

The basis for waste management regulations in Greece is the Law on waste management[234] (No. 4042/2012, Section II). Article 13 of the Law transposes the European List of Waste (p. 15) into Greek law. No specific regulations for wood waste are in place[235].

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

All persons and entities involved in waste management or production of waste are obliged to submit waste data to an Electronic Waste Register[236]. The production of waste statistics is under the responsibility of the Ministry of the Environment[237]. The Waste Register allows for searches of waste quantities (registered by LoW code) for each municipality by collection, storage and treatment activities. No specific data on wood waste is available there.

[234] www.e-nomothesia.gr/kat-periballon/apobleta/n-4042-2012.html
[235] dasarxeio.com/2018/12/12/63147/
[236] wrm.ypeka.gr/
[237] ypen.gov.gr/#

HUNGARY

LEGAL BASIS

The foundation for waste management in Hungary is the Law about waste[238] (No. 185/2012). The Decree on the list of wastes[239] (No. 72/2013) contains the European List of Waste (p. 15), aligning the Hungarian to the EU classification. Wooden packaging is addressed in the Decree on packaging and waste management activities related to packaging waste[240] (No. 442/2012), which sets a minimum recycling obligation of 90% for pallets and a recovery target of 15% for other wooden packaging. The Decree on detailed rules for the management of construction and demolition waste[241] (No. 45/2004) obliges construction companies to collect wood waste separately if the amount exceeds the quantitative threshold of 5 tons.

SECTORAL CLASSIFICATION

Most post-consumer wood is currently incinerated with or without energy recovery (Laborczy & Winkler, 2016).

STATISTICAL CLASSIFICATION

Producers, collectors, dealers and managers of waste are required to provide information on a regular basis about the waste generated from their activities or treated by them if the waste quantity exceeds a threshold. The reporting is done through the Electronic Waste Information System database[242] maintained by the Ministry of Agriculture[243]. In the database, waste quantities are available by LoW code, region, economic sector and treatment. Part of the data is published as waste statistics by the Central Statistical Office[244]. Data on different types of waste (construction and demolition, municipal waste, hazardous waste, etc.) are available by treatment method[245].

[238] net.jogtar.hu/jogszabaly?docid=a1200185.tv
[239] net.jogtar.hu/jogszabaly?docid=a1300072.vm
[240] net.jogtar.hu/jogszabaly?docid=A1200442.KOR
[241] net.jogtar.hu/jogszabaly?docid=A0400045.BM
[242] web.okir.hu/sse/?group=EHIR
[243] kormany.hu/agrarminiszterium
[244] www.ksh.hu/?lang=en
[245] www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_ur006a.html

ICELAND

LEGAL BASIS

The foundation of waste legislation in Iceland is the Waste Management Act[246] (No. 55/2003). In addition, the Regulation on the list of waste and assessment of hazardous properties of waste[247] (No. 1040/2016) transposes the European List of Waste (p. 15) into Islandic law.

SECTORAL CLASSIFICATION

Although material recovery options for post-consumer wood exist, efforts are ongoing for limiting landfilling and incineration of wood waste[248].

STATISTICAL CLASSIFICATION

Waste statistics are published by Statistics Iceland[249], the national center of official statistics. Data on wood waste (EWC-Stat code 07.5) is available there by treatment method[250].

[246] www.althingi.is/lagas/nuna/2003055.html
[247] www.reglugerd.is/reglugerdir/eftir-raduneytum/umhverfis--og-audlindaraduneyti/nr/20339
[248] reykjavik.is/sites/default/files/adgerdaaaetlun_i_urgangsmalum_i_reykjavik_til_2020_0.pdf
[249] hagstofa.is/
[250] hagstofa.is/talnaefni/umhverfi/efnisflaedi/urgangur/

IRELAND

LEGAL BASIS

The basis for Irish waste regulations is the Waste Management Act[251] (No. 10, 1996), as amended by the European Union (Waste Management) (Waste Impact Assessment) Regulations[252] (No. 130, 2020).

SECTORAL CLASSIFICATION

The classification system for wood waste used in Ireland is dependent on whether it is to be exported to the UK or used inside the EU. If the wood waste is to be exported to the UK, the four-grade classification system developed by the Wood Recyclers' Association (WRA, 2009) is used (Table 15). However, if the final use is in Ireland or other EU countries, the European classification system is used (Table 9). Codes starting with 17 are assigned by construction & demolition (C&D) companies when skips are filled in-situ. Codes starting with 19 are assigned by waste management facilities for wood waste processing (Llana *et al.*, 2020).

Table 9: Most common used LoW codes for wood waste in Ireland

LoW Code	Materials	Application
170201	Wood non-hazardous	When wood waste is segregated in-situ, skips containing only wood
170903	C&D wastes containing hazardous substances	Mixed or segregated wood waste in the skips
170904	Mixed C&D wastes non-hazardous	When wood waste is mixed in skips with other materials
191206	Wood containing hazardous substances	
191207	Wood other than mentioned in 191206	This code is assigned to 170201 skips arriving at waste management facilities or is assigned to wood from 170904 skips after it is segregated from other materials in the facilities

Source: Llana *et al.*, 2020

STATISTICAL CLASSIFICATION

The Irish Environmental Protection Agency[253] (EPA) produces national waste statistics. New data on individual waste streams is published on the EPA website as soon as it becomes available.[254] Waste data are collected via

[251] www.epa.ie/pubs/legislation/waste/licpermit/EPA_waste_management_act_1996.pdf

[252] www.epa.ie/pubs/legislation/waste/licpermit/European%20Union%20(Waste%20Management)%20(Environmental%20Impact%20Assessment)%20Regulations%202020%20(S.I.%20130%20of%202020).pdf

[253] www.epa.ie/

[254] www.epa.ie/nationalwastestatistics/

surveys of waste operators and local authorities and other administrative data sources. In addition, the composition of Ireland's municipal waste is regularly updated through waste characterization studies.[255] Waste statistics are published for the categories municipal waste (including household waste and similar commercial & other waste), C&D, packaging, infrastructure and hazardous waste. The following waste streams are documented separately: food, electric & electronic equipment, end-of-life vehicles, composting & anaerobic and tires. Wood waste is recorded as a separate subcategory for packaging waste and construction & demolition waste. Only a minor fraction of C&D wood waste is collected as a separate material stream.[256] For household waste, wood waste is part of the subcategory "metals, glass and wood".

[255] www.epa.ie/waste/municipal/

[256] www.epa.ie/pubs/reports/waste/stats/wastereport2020/EPA_Nat_Waste_Stats_Report_Web.pdf

ISRAEL

LEGAL BASIS

The foundation of waste regulations in Israel is the Waste Collection and Disposal of Waste Law[257] (No. 5733, 1993, as amended). The Packaging Treatment Law[258] (2011) includes a recycling target of 15% for wooden packaging.

SECTORAL CLASSIFICATION

The majority of waste is currently landfilled in Israel. Strategies are in place to promote waste incineration[259].

STATISTICAL CLASSIFICATION

The Ministry of the Environment[260] is responsible for collecting data on waste composition and types. In addition to the Waste Information System[261] that records waste quantities at transfer stations and landfill sites, the Ministry conducts regular survey on municipal waste composition[262]. 69 types of waste are recorded in the Waste Information System database, number 46 corresponds to wood waste[263]. Waste statistics[264] are issued by the Central Bureau of Statistics[265].

[257] main.knesset.gov.il/Activity/Legislation/Laws/Pages/LawPrimary.aspx?t=lawlaws&st=lawlaws&lawitemid=2000077

[258] www.nevo.co.il/law_html/law05/514_3_1.htm

[259] www.globes.co.il/news/article.aspx?did=1001338979

[260] www.gov.il/he/departments/ministry_of_environmental_protection

[261] data.gov.il/dataset/waste-information-system

[262] www.gov.il/he/departments/guides/waste_facts_and_figures?chapterIndex=3

[263] data.gov.il/dataset/waste-information-system/resource/ca71e149-49f1-48a2-b319-b27be21e3e21

[264] www.cbs.gov.il/he/subjects/Pages/%D7%A4%D7%A1%D7%95%D7%9C%D7%AA-%D7%95%D7%9E%D7%97%D7%96%D7%95%D7%A8---%D7%94%D7%92%D7%93%D7%A8%D7%95%D7%AA-%D7%95%D7%94%D7%A1%D7%91%D7%A8%D7%99%D7%9D.aspx

[265] www.cbs.gov.il/en/Pages/default.aspx

ITALY

LEGAL BASIS

The legal framework for waste management in Italy is provided by the Decree on the Code on the Environment [266] (No. 152/2006). The authorization for wood waste disposal and recovery is granted under article 208 of the Decree, while the requirements for the incineration of hazardous wood waste are laid out in article 237.

Chapter 5 of the Decree on the Code on the Environment deals with simplified recovery procedures. Article 214 identifies waste streams which can be subjected to simplified procedures for material and energy recovery. Wood waste from different sources falls under this Decree, including from construction and demolition, industry, agriculture and households.

The Law on the Environment [267] (No. 221, 2015) includes actions aimed at promoting the circular economy and green public procurement. According to the Law, only virgin wood, meaning wood subjected only to mechanical treatment, can benefit from incentives for the use as fuel in biomass and biogas plants. Wood waste containing glue, wood panels and other non-virgin wood is excluded from incentives for renewable energy [268].

SECTORAL CLASSIFICATION

In wood waste management, a distinction is made between virgin and glued wood. This stems from the different combustion legislation for these types of wood waste. Wood waste which has been subject to any other treatment than mechanical is not listed as a fuel and needs to be treated as waste when it comes to combustion.

In 2020 the Italian producers of particleboard and medium-density fiberboard represented by the national association Assopannelli [269] signed a quality protocol which outlines the quality control of the processing of wood waste for wood-based panel production. The protocol includes national obligations as well as new requirements for control of the suppliers, the delivered material, the process and the final product in order to ensure the quality of the production process. This voluntary agreement is currently undergoing a procedure to be recognized by the standardization body Italian National Unification [270] (UNI).

Source: Omar Degoli, personal communication, 2020

STATISTICAL CLASSIFICATION

Waste statistics are issued by the Institute for Environmental Protection and Research [271] (ISPRA). Data on municipal wood waste generation is collected by ISPRA through an annual survey at the regional and provincial levels [272].

[266] www.gazzettaufficiale.it/dettaglio/codici/materiaAmbientale
[267] www.gazzettaufficiale.it/eli/id/2016/1/18/16G00006/sg
[268] www.ambiente.it/informazione/focus-on/il-collegato-ambientale-parte-2.html
[269] www.federlegnoarredo.it/it/associazioni/assopannelli
[270] www.uni.com/
[271] www.isprambiente.gov.it/en/istitute
[272] www.catasto-rifiuti.isprambiente.it/index.php?pg=metodoru

KAZAKHSTAN

LEGAL BASIS

The basis for waste regulations in Kazakhstan is the Ecology Code[273] (No. 400-VI, 2021) which replaced the former Environmental Code[274] (No. 212, 2007). The Ecology Code establishes the waste hierarchy. Moreover, it lays the foundation for the development of a six-digit waste classification system. In this classification, waste will be classified as non-hazardous or hazardous. Waste passports will be kept for hazardous waste.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Committee on Statistics[275] is responsible for producing waste statistics[276]. Data on municipal solid waste amounts are calculated from the generation of waste per capita and estimated density of the waste. This standard generation per capita is defined by each municipality separately and is valid for several years. Amounts of industrial waste are available by economic activity. This data is based on calculated amounts of waste per unit of production. (UNECE, 2019) No data is available specifically for wood waste.

[273] adilet.zan.kz/kaz/docs/K2100000400#z3899
[274] adilet.zan.kz/kaz/docs/K070000212_
[275] stat.gov.kz/misc/link
[276] stat.gov.kz/ecologic/waste_generation?lang=en

KYRGYZSTAN

LEGAL BASIS

The basis for waste regulations in Kyrgyzstan is the Law on production and consumption waste[277] (No. 89, 2001, last amended in 2020).

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

Waste statistics are produced by the National Statistics Committee of the Kyrgyz Republic[278]. Data on waste quantities is available by hazard class (1, 2, 3 or 4) and by region[279]. No data is available specifically for wood waste.

[277] cbd.minjust.gov.kg/act/view/ky-kg/924
[278] stat.kg/en/
[279] stat.kg/en/statistics/turizm-otdyh-ohrana-okruzhayushej-sredy/

LATVIA

LEGAL BASIS

The basis for waste regulations in Latvia is the Waste Management Law[280] (No. 183, 2010). The Regulation on waste classification and properties that make waste hazardous[281] (No. 302, 2011) contains the European List of Waste (p. 15), aligning the Latvian classification codes with the EU ones.

A Regulation on separate collection, preparation for re-use, recycling and recovery of materials[282] (No. 73, 2013) is in place, however it does not apply to wood waste.

SECTORAL CLASSIFICATION

Currently most wood waste in Latvia is landfilled or incinerated, partly in private homes, however initiatives exist to enhance its recovery[283].

STATISTICAL CLASSIFICATION

The Central Statistical Office[284] is responsible for publishing waste statistics in the Official Statistics Portal[285]. Data on municipal and hazardous waste is available without further disaggregation of types of waste.

[280] likumi.lv/ta/id/221378-atkritumu-apsaimniekosanas-likums
[281] likumi.lv/ta/id/229148-noteikumi-par-atkritumu-klasifikatoru-un-ipasibam-kuras-padara-atkritumus-bistamus
[282] likumi.lv/ta/id/256092-noteikumi-par-atkritumu-dalitu-savaksanu-sagatavosanu-atkartotai-izmantosanai-parstradi-un-materialu-regeneraciju
[283] www.la.lv/dedzinat-nedrikst-parstradat
[284] www.csb.gov.lv/lv/sakums
[285] stat.gov.lv/lv

LIECHTENSTEIN

LEGAL BASIS

The basis for waste regulations in Liechtenstein is the Act on Environmental Protection[286] (No. 199, 2008, last amended in 2015), which establishes the waste hierarchy. Additionally, the Waste Management Ordinance[287] (No. 92, 2016) regulates registration and reporting obligations. The Ordinance on packaging and packaging waste[288] (No. 166, 1997, last amended in 2020) sets a recycling target of 15% for wooden packaging.

The Ordinance on the intermediate storage and processing spaces for wood waste[289] (No. 73, 2000, last amended in 2014) distinguishes five types of wood waste:

- "waste wood from building demolitions, conversions and renovations,
- waste wood from packaging such as pallets and boxes,
- wooden furniture,
- treated wood (e.g. pressure impregnated),
- wood of a similar type or origin".

Moreover, the Ordinance prescribes the separate storage of wood waste at intermediate storage spaces and recycling facilities. Wood waste must not be used as a fuel in combustion plants.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The reporting of waste management data by companies is done through the data management system Waste Statistics[290] that is administered by the Environmental Office[291]. Waste statistics are issued by the Statistical Office[292]. Data on waste management is available by waste fractions, by economic activity, by municipality and by treatment operation[293]. Amounts of recycled material are available for some waste streams, but not for wood waste. The amount of wooden packaging is included in the packaging waste data.

[286] www.gesetze.li/konso/2008.199
[287] www.gesetze.li/konso/2016092000
[288] www.gesetze.li/konso/1997166000
[289] www.gesetze.li/konso/2000073000
[290] www.abfallstatistik.li
[291] www.llv.li/inhalt/12298/amtsstellen/amt-fur-umwelt
[292] www.llv.li/inhalt/11480/amtsstellen/amt-fur-statistik
[293] www.llv.li/inhalt/12176/amtsstellen/umweltstatistik

LITHUANIA

LEGAL BASIS

The basis for waste regulations in Lithuania is the Waste Law[294] (No. VIII-787, 1998, last amended in 2020) which transposes the European Waste Framework Directive (p. 18) into national legislation. In addition to the Law, the Order on the approval of waste management rules[295] (No. 217, 1999, last amended in 2018) sets requirements for waste sorting, collection, transport and treatment. The Order contains the European List of Waste (p. 15), aligning the waste classification in Lithuania with the EU one.

The Order on rules for the management of packaging and packaging waste[296] (No. 348, 2002, last amended in 2021) establishes a packaging labeling system in which wooden packaging is labeled with the codes 50 for wood and 51 for cork.

The Order on the approval of construction waste management rules[297] (No. D1-637, 2006, last amended in 2018) includes a requirement for the separate storage of recyclable and reusable waste at the construction site, i.e. packaging, paper, glass, plastic and other waste suitable for recycling.

The Law on energy from renewable sources[298] (No. 62-2936, 2011) seeks to promote the use of renewable sources for energy production. The Law defines biomass as a renewable energy source, including wood in the form of products, waste and residues from forestry as well as biodegradable industrial and municipal waste. Wood obtained from areas with high biodiversity value must not be considered a source for biofuels for transport or bioliquids.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Environmental Protection Agency[299] is responsible for collecting waste management data[300]. Waste statistics are available on the Official Statistics Portal[301] maintained by Statistics Lithuania[302], the national statistical office. Data on waste management is available by economic activity, by waste type and by treatment[303]. Wood waste is included there, but not further disaggregated.

[294] www.e-tar.lt/portal/lt/legalAct/TAR.8D38517814F1/asr
[295] www.e-tar.lt/portal/lt/legalAct/TAR.38E37AB6E8E6/asr
[296] www.e-tar.lt/portal/lt/legalAct/TAR.9B932C244A2B/asr
[297] www.e-tar.lt/portal/lt/legalAct/TAR.7AB67E481C45/asr
[298] e-seimas.lrs.lt/portal/legalAct/lt/TAD/648259603c3b11e68f278e2f1841c088?jfwid=rivwzvpvg
[299] gamta.lt/cms/index
[300] atliekos.gamta.lt/cms/index?rubricId=5b32f9db-9799-49f4-9bce-9e83b5372967
[301] osp.stat.gov.lt/pradinis
[302] www.stat.gov.lt/home
[303] osp.stat.gov.lt/EN/statistiniu-rodikliu-analize?hash=af9953af-3ff9-4d90-8c92-6335ddc0c012#/

LUXEMBOURG

LEGAL BASIS

The Law on Waste Management[304] (No. A60, 2012) is the basis for waste management regulations in Luxembourg. Article 8 of the Law references the European List of Waste (p. 15), aligning the Luxembourgish to the EU classification. Chapter 3 of the Law is dedicated to specific waste streams including construction and demolition wastes, which are subjected to separate collection. Moreover, the Law on packaging and packaging waste[305] (No. A330, 2017) establishes take-back obligations, separate collection and recycling targets for packaging including wooden packaging.

SECTORAL CLASSIFICATION

Municipal wood waste is either collected from households or at recycling centers, while industrial wood waste is most often collected by approved collectors. Wood waste is generally sorted into treated and untreated wood. Wood is considered treated wood unless there is proof that the wood has only been submitted to mechanical treatment, in which case it is considered untreated. Treated wood waste undergoes energy recovery, while untreated wood waste can be recycled (Environment Agency, 2018).

The most commonly used codes for wood waste are:

200137	wood containing dangerous substances
200138	wood other than that mentioned in 20 01 37
030101	waste bark and cork
030105	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
150103	wooden packaging
170201	wood
191206	wood containing dangerous substances
191207	wood other than that mentioned in 19 12 06

In the industry it is a common practice to use the waste codes 200137 and 200138 in order to distinguish between wood waste that is considered dangerous (treated) and wood waste that is not considered dangerous (untreated). The same reasoning applies after the first sorting and shredding of wood waste with the difference that here the codes 191206 and 191207 are used.

Source: Stephanie Goergen, personal communication, 2021

STATISTICAL CLASSIFICATION

Data on total generation and treatment of wood waste is produced by the Environment Agency[306] and published on the Luxembourgish data platform[307]. The data on generation is disaggregated by economic activity (NACE

[304] legilux.public.lu/eli/etat/leg/loi/2012/03/21/n1/jo
[305] legilux.public.lu/eli/etat/leg/loi/2017/03/21/a330/jo
[306] environnement.public.lu/fr.html
[307] data.public.lu/en/

codes, p. 17) and waste type (LoW codes). Data on total treatment of wood waste is disaggregated by waste type, by method of treatment and by country of treatment.

Source: Stephanie Goergen, personal communication, 2021

MALTA

LEGAL BASIS

The basis for waste regulations in Malta is the Environmental Protection Act, Chapter 549, Articles 54 and 55[308] (2016, last amended in 2018). Based on the Act, the Waste Regulations law[309] (No. 549.63, 2011, last amended in 2015) was implemented, which transposes the European Waste Framework Directive (p. 18) into Maltese legislation. Article 7(1) references the European List of Waste (p. 15), aligning the Maltese waste classification to the EU one. The Waste Management (Packaging and Packaging Waste) Regulations[310] (No. 549.43, 2007, last amended in 2020) prescribes a 15% recycling target for wooden packaging.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

Waste statistics[311] are provided by the Environment and Resources Authority[312]. They are divided into municipal solid waste; construction and demolition waste; and commercial and industrial waste. Waste quantities are available by treatment operation. Additionally, data on waste collection[313] is provided by Wasteserv Malta[314], the company responsible for operating an integrated waste management in Malta.

No waste statistics are specifically available for wood waste.

[308] era.org.mt/wp-content/uploads/2019/05/CAP_549.pdf
[309] legislation.mt/eli/sl/549.63/eng/pdf
[310] legislation.mt/eli/sl/549.43/eng/pdf
[311] era.org.mt/topic/waste-statistics/
[312] era.org.mt/
[313] www.wsm.com.mt/statistics/waste_collection.aspx
[314] www.wsm.com.mt/en/about-us

MONACO

LEGAL BASIS

The basis for waste regulations in Monaco is the Environmental Code[315] (No. 1.456, 2017). The Ordinance relating to waste[316] (No. 6.251, 2017) is linked to the Environmental Code and describes the principles of waste management in Monaco.

SECTORAL CLASSIFICATION

The Monaco Charter on Wood[317] is an initiative by the Prince Albert II of Monaco foundation[318] together with the government of Monaco. It was launched in 2010 as a commitment against deforestation. The Charter is signed by 58 Monegasque and international organizations and companies (February 2021). It contains a commitment to exclusively use FSC (p. 21) or PEFC (p. 22) certified wood or wooden products (including furniture, paper and cardboard) as well as to ensure a separate collection of wood waste.

STATISTICAL CLASSIFICATION

Data provided by the Monaco Sanitation Company[319] is published as waste statistics in the annual "Monaco in numbers"[320] publication by Monaco Statistics[321], the national statistical office. No data is available specifically on wood waste.

[315] journaldemonaco.gouv.mc/Journaux/2017/Journal-8361/Loi-n-1.456-du-12-decembre-2017-portant-Code-de-l-environnement
[316] journaldemonaco.gouv.mc/Journaux/2017/Journal-8315/Ordonnance-Souveraine-n-6.251-du-20-janvier-2017-relative-aux-dechets
[317] www.imedd-group.com/en/the-charter-on-wood-monaco-commits-against-deforestation/
[318] www.fpa2.org/
[319] www.sma.mc/
[320] www.gouv.mc/Action-Gouvernementale/L-Economie/Analyses-et-Statistiques/Publications/Monaco-en-Chiffres-2020
[321] www.monacostatistics.mc/

MONTENEGRO

LEGAL BASIS

The basis for waste regulations in Montenegro is the Law on waste management[322] (No. 64/2011) that contains the polluter pays principle, the extended producer responsibility principle for specific waste streams (batteries and accumulators, electrical and electronic products, motor vehicles, tires, packaging and motor oil), and a 15% recycling target for wooden packaging. The Ordinance on Waste Classification and the Waste Catalogue[323] (No. 059, 2013, last amended in 2016) contains the European List of Waste (p. 15), aligning the Montenegrin waste classification to the EU one.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Environmental Protection Agency[324] is responsible for publishing waste statistics[325] on municipal waste, industrial waste and medical waste. The data on waste management is collected by the Statistical Office of Montenegro[326] through waste surveys and made available on the website[327]. The waste statistics contain data by economic activity, by waste groups (first and second digit of the LoW code), by hazardousness and by treatment. No specific data is available for wood waste.

322 www.kei.gov.me/ResourceManager/FileDownload.aspx?rid=312117&rType=2&file=Law%20on%20Waste%20Management.pdf

323 mrt.gov.me/ResourceManager/FileDownload.aspx?rid=264272&rType=2&file=Pravilnik%20o%20klasifikaciji%20otpada%20i%20Katalogu%20otpada.pdf

324 epa.org.me/opste-informacije/

325 epa.org.me/wp-content/uploads/2020/10/Informacija%20o%20stanju%20zivotne%20sredine%20za%202019.%20godinu.pdf

326 www.monstat.org/cg/index.php

327 www.monstat.org/eng/page.php?id=1009&pageid=64

NETHERLANDS

LEGAL BASIS

A national list of waste classifications with 109 categories is used in the Netherlands. The waste classification is linked to the European List of Waste (p. 15), but it is not based on it. The Dutch waste classification as well as the existing correspondence between the national list and LoW can be found in the appendix F.5.2 and F.5.3 of the current National Waste Management Plan LAP3 2019[328]. According to LAP3, wood waste is divided into the categories A-wood, B-wood, non-wolmanized C-wood and wolmanized C-wood (Table 10). Wood waste is included in the Dutch list of waste under the numbers 19 (A- and B-wood, other than packaging), 20 (wooden packaging that is A-wood or B-wood) and 21 (wolmanized C-wood). According to the Environmental management activities regulation[329] (No. DJZ2007104180, 2007), A-, B- and C- wood must be stored separately at municipal recycling centers. The National Waste Management Plan LAP3 defines 85 Sector Plans for different waste streams. Wood waste is addressed in Sector Plan 36[330], while wood packaging waste is included under Sector Plan 41[331] that deals with packaging waste in general. Different minimum treatment standards apply to the wood waste of categories A, B and C (Table 10). Moreover, Sector Plan 36 contains requirements for the incineration of wood waste.

Table 10: Wood waste categories and minimum treatment standards in the Netherlands according to Sector Plan 36

Category	Definition	Minimum treatment standards
A	unpainted and untreated wood	Other useful recovery
B	wood that is neither A-wood nor C-wood, including painted, varnished and glued wood	Other useful recovery
Non-wolmanized C	impregnated wood that has been treated with creosote, fungicides, insecticide, boron-containing compounds or quaternary ammonium compounds	Main use as fuel. All other forms of recovery are prohibited, unless for the recycling of creosoted wood, in this case the European REACH Regulation[332] (2006/1907/EC) applies
Wolmanized C	impregnated wood that has been treated with agents containing copper and chromium or copper, chromium and arsenic	Landfilling on suitable landfills. Recovery is explicitly prohibited to prevent the diffusion of heavy metals in the environment, unless: • It concerns “main use as fuel” or “incineration as form of disposal” in installations where

[328] lap3.nl/publish/pages/121774/lap3_deel_f_bijlagen_totaal_19_07_2019.pdf
[329] wetten.overheid.nl/BWBR0022830/2020-07-08
[330] lap3.nl/publish/pages/120639/lap3_sp36_hout_19_07_2019.pdf
[331] lap3.nl/publish/pages/120606/lap3_sp41_verpakkingen_algemeen_19_07_2019.pdf
[332] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006R1907&from=EN

generated residues (ashes) are landfilled in order to avoid diffusion of the metals

- There is a case of recycling of wolmanized C-wood, in this case the European REACH Regulation [333] (EC/1907/2006) applies

Source: Sector Plan 36

SECTORAL CLASSIFICATION

In general, the LAP3 category A wood waste stream is quite small as category A wood waste is mostly mixed with the category LAP3 B wood waste stream. Within the sector, the category B stream with a relatively high share of category A is called AB category wood, but this isn't an official classification within the waste regulation or waste statistics.

Source: Jan Oldenburger, personal communication, 2021

STATISTICAL CLASSIFICATION

The Ministry of Infrastructure and Water Management [334] is responsible for collecting and publishing waste data [335]. The data is available through the Swing database [336]. Disaggregated quantities of household waste streams are available for separately collected AB wood, C wood and furniture. Within the Sector Plan 41 for wood packaging, an annual report is published including information on the amounts and the final treatment of this waste stream [337].

[333] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006R1907&from=EN
[334] www.rijkswaterstaat.nl/english/index.aspx
[335] www.afvalcirculair.nl/onderwerpen/monitoring-cijfers/afvalcijfers/
[336] afvalmonitor.databank.nl/Jive/Jive?cat_open=Gemeentelijk%20niveau/Ingezamelde%20hoeveelheden%20en%20scheidingspercentages%20huishoudelijk%20afval
[337] afvalfondsverpakkingen.nl/monitoring/monitoringsrapportage

NORTH MACEDONIA

LEGAL BASIS

The basis for waste regulations in North Macedonia is the Law on waste management[338] (No. 68/2004 and 71/2004, last amended in 2011). The Law directs the responsibility of introducing a List of types of waste to the Minister of the Environment. The introduced List[339] is identical to the European List of Waste (p. 15). In addition to the use of the List, all waste is categorized into five categories, wood waste belongs to category 5 (biological waste without hazardous materials, from animals and other natural origin).

A draft package of waste laws in line with EU waste management regulations has been adopted by the North Macedonian government in December 2020. The drafts include the law on waste management, the law on extended producer responsibility in the management of specific waste streams, the law on management of electrical and electronic equipment and electrical and electronic equipment waste, the law on management of additional waste streams (namely textiles, tires, oils and vehicles) in the system of extended producer responsibility, the law on management of packaging and packaging waste and the law on management of batteries and accumulators and batteries and accumulators waste [340].

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The State Statistical Office[341] is in charge for collecting and disseminating the data on the different waste categories and recycling processes. No data is available specifically for wood waste[342].

Source: Ljupco Nestorovski, personal communication, 2021

[338] dejure.mk/zakon/zakon-za-upravuvanje-so-otpadot-prechisten-tekst
[339] www.moepp.gov.mk/wp-content/uploads/2014/09/%d0%9b%d0%b8%d1%81%d1%82%d0%b0%20%d0%bd%d0%b0%20%d0%b2%d0%b8%d0%b4%d0%be%d0%b2%d0%b8%20%d0%bd%d0%b0%20%d0%be%d1%82%d0%bf%d0%b0%d0%b4%d0%b8.pdf
[340] vlada.mk/node/23660
[341] www.stat.gov.mk/Default_en.aspx
[342] www.stat.gov.mk/OblastOpsto_en.aspx?id=28

NORWAY

LEGAL BASIS

The Regulations on recycling and treatment of waste[343] (No. 930, 2004) are the foundation of Norwegian waste legislation. While several chapters of the Regulations deal with specific waste streams, wood waste is not addressed there. Chapter 7 of the Regulations[344], which deals with packaging waste, establishes collection and recycling obligations for producers including a 15% recycling target for wooden packaging. A landfill ban for biodegradable waste including wood waste is regulated in Chapter 9 of the Regulations[345].

SECTORAL CLASSIFICATION

Most of wood waste is currently incinerated for energy recovery[346][347].

STATISTICAL CLASSIFICATION

Statistics Norway[348], the national statistical institute, is responsible for compiling waste statistics. Data collection occurs through industry surveys[349] that are submitted electronically via Altinn[350]. Wood waste quantity estimates are complemented by statistics on imports, exports and production of goods as well as on product lifespan and material composition[351]. Detailed waste accounts are available at Statbank Norway[352]. Data on wood waste, which is not further disaggregated, is available by source and treatment method.

[343] lovdata.no/dokument/SF/forskrift/2004-06-01-930
[344] lovdata.no/dokument/SF/forskrift/2004-06-01-930/KAPITTEL_7#KAPITTEL_7
[345] lovdata.no/dokument/SF/forskrift/2004-06-01-930/KAPITTEL_9#KAPITTEL_9
[346] www.nrk.no/innlandet/forestia-vil-bruke-treavfall-i-industrien-men-far-ikke-stotte-1.15336437
[347] www.regjeringen.no/no/aktuelt/skaper-verdier-av-treavfall-og-restprodukter-fra-treindustri/id2612678/
[348] www.ssb.no/en/
[349] www.ssb.no/innrapportering/naeringsliv
[350] www.altinn.no/
[351] www.ssb.no/a/publikasjoner/pdf/rapp_200012/rapp_200012.pdf
[352] www.ssb.no/statbank/list/avfregno

POLAND

LEGAL BASIS

The basis for waste regulations in Poland is the Act on waste[353] (2012). The Ordinance on the waste catalogue[354] (2020) by the Climate Minister[355] adopts the European List of Waste (p. 15), aligning the Polish to the EU waste classification. 'Waste from forestry' is classified there in group 02 of the catalogue, and wood waste from wood manufacturing, furniture manufacturing and pulp and paper industry in group 03 (Annex to the catalogue).

In Poland waste management must comply with the requirements of the Environmental Protection Law[356] (2001) and the National Waste Management Plan[357] (2016) as well as their regional and provincial corresponding regulations. The policy document on waste prevention activities, both at the national and provincial level, is the National Waste Prevention Programme[358] (2014).

The Act on waste contains separate categories of waste (including hazardous waste, for which hazardous components and properties have been specified), waste management practices (recovery – including energy recovery, recycling), and possible waste neutralization methods. In the Ordinance on the waste catalogue, which includes hazardous waste (in accordance with the European Waste Catalogue), waste is classified based on its source. Polish legal acts do not specify limit values that would allow to classify waste as hazardous or non-hazardous, especially in relation to chemically contaminated waste.

Source: Ewa Ratajczak, personal communication, 2021

SECTORAL CLASSIFICATION

In Poland, there is no classification system for wood waste based on the content of impurities. Some companies involved in the recovery of wood from waste and the preparation of wood waste for recycling and processing use the German classification system (p. 49). Actions for implementing a national wood waste classification system are ongoing. [359]

The panel industry follows the EPF Standard (p. 20) for treating wood waste[360].

In practice, wood waste in Poland is identified by the place of origin, as follows:

- post-production wood residues (waste generated in the technological process of manufacturing wood materials and products),
- post-consumer wood waste (waste generated from used wood products (final products or their parts) as a result of their natural, technical or economic consumption).

[353] sip.lex.pl/akty-prawne/dzu-dziennik-ustaw/odpady-17940659
[354] sip.lex.pl/akty-prawne/dzu-dziennik-ustaw/katalog-odpadow-18938969
[355] www.gov.pl/web/klimat
[356] sip.lex.pl/akty-prawne/dzu-dziennik-ustaw/prawo-ochrony-srodowiska-16901353
[357] sip.lex.pl/akty-prawne/mp-monitor-polski/krajowy-plan-gospodarki-odpadami-2022-18334576
[358] www.gov.pl/web/klimat/zapobieganie-powstawaniu-odpadow
[359] Based on, inter alia, expert opinions by the Wood Technology Institute for the Ministry of the Environment

[360] Martin Loebs, personal communication, 2020

In addition, in line with the current Act on waste, wood processing residues, i.e. post-production wood waste generated in subsequent stages of wood treatment, may be considered wooden by-products (and as such not a subject to waste regulations).

Source: Ewa Ratajczak, personal communication, 2021

STATISTICAL CLASSIFICATION

Statistics Poland[361] collects the data on industrial and communal waste in accordance with the annual program of statistical surveys of official statistics[362] and based on the Waste Catalogue. Communal waste statistics are published separately from those on industrial waste (M-09 - Report on collection and treatment of municipal waste and OS-6 - Report on waste (excluding municipal waste))[363]. Reporting on non-municipal waste covers entities generating a total of more than 1,000 tonnes of waste per year or with 1 million tonnes or more of waste accumulated in own landfills, in underground landfills or in waste disposal facilities. Waste produced during the year is registered, including self-recovered waste, self-neutralized waste, waste transferred to other recipients, temporarily stored waste, and waste previously stored in own facilities. Statistics Poland reporting also covers recyclable waste (G-06 - Report on recyclable waste). Data on waste collected through the Statistics Poland reporting is supplemented with information from ministries, environmental protection inspectorates and marshal offices. Municipal waste quantities are reported on a communal level by waste collectors.

The existing waste recording system in Poland does not allow for disaggregation of data by post-production wood waste and wooden by-products as well as post-consumer wood waste. For analytical purposes, sources of post-production and post-consumer wood waste are determined using a model approach, assuming that:

- sources of post-production wood waste and wooden by-products in various forms are a derivative of the production volume of wood materials and products as well as the material and raw material efficiency achieved in technologies used for wood processing,
- sources of post-consumer wood waste are a function of consumption of final wood products which were placed on the market in relatively previous periods (method based on the concept of life cycle of wood products, the system of indicators of rotation, and the average service life of final wood products) (Ratajczak *et al.*, 2003).

Source: Ewa Ratajczak, personal communication, 2021

[361] The Polish Central Statistical Office - stat.gov.pl/

[362] bip.stat.gov.pl/dzialalnosc-statystyki-publicznej/program-badan-statystycznych/pbssp-2021/

[363] form.stat.gov.pl/formularze/2017/index.htm;
stat.gov.pl/download/gfx/portalinformacyjny/pl/defaultaktualnosci/5492/9/1/1/odpady_komunalne_i_utrzymanie_czystosci_i_porzadku_w_gminach_w_2017_roku.pdf

PORTUGAL

LEGAL BASIS

The basis for Portuguese waste regulations is provided by the Decree-Law No. 178/2006[364] (last amended in 2011), which transposes the European Waste Framework Directive (p. 18) into Portuguese law. The Ordinance No. 209/2004[365] approves the European List of Waste (p. 15), aligning the Portuguese to the EU classification. Specific waste streams, among them packaging including wooden packaging, are subject to extended producer responsibility under Decree-Law No. 152-D/2017[366].

SECTORAL CLASSIFICATION

The only classification that is currently in place consists of sorting hazardous from non-hazardous wood waste (Costa & Fernando, 2018).

STATISTICAL CLASSIFICATION

The National Statistics Institute[367] is responsible for compiling municipal and sectoral waste statistics based on data from the Integrated Electronic Waste Registration System[368]. Quantities of hazardous and non-hazardous wood waste are available by NACE Rev. 2 economic activity (p. 17).

Since the implementation of the Electronic Waste Registration System, waste managers are required to use LoW codes. This has led to the LoW code classification becoming the standard for describing waste streams in Portugal.

Source: Eduardo Botín, personal communication, 2021

[364] dre.pt/application/conteudo/540016
[365] www.azores.gov.pt/NR/rdonlyres/A80367A7-5DAE-47F0-A5B9-E96677511D93/615504/P_209_2004.pdf
[366] dre.pt/application/conteudo/114337042
[367] www.ine.pt/xportal/xmain?xpgid=ine_main&xpid=INE
[368] www.apambiente.pt/index.php?ref=16&subref=84&sub2ref=212

REPUBLIC OF MOLDOVA

LEGAL BASIS

The basis for waste regulations in the Republic of Moldova is the Law on waste[369] (No. 209/2016, last amended in 2019) which establishes the waste hierarchy and the extended producer responsibility for packaging waste. The Government Decision for the approval of the waste list[370] (No. 99, 2018) contains the European List of Waste (p. 15), aligning the waste classification in the Republic of Moldova to the EU one.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Automated Information System "Waste Management"[371] is a database on waste management that will be used for reporting waste data and for generating waste statistics. It is currently (February 2021) under development[372] by the Ministry of Agriculture, Regional Development and Environment[373]. The National Bureau of Statistics[374] is responsible for compiling and publishing waste statistics. The data sources include records on waste generation, treatment and trade from the public and private sector as well as a report on the formation and use of waste by the Ministry of Agriculture, Regional Development and Environment.[375] In the Moldova Statistical Database[376], waste statistics are divided into municipal and industrial waste. For municipal waste, data is available by regions, whereas industrial waste data is available by economic activity. No data is available specifically for wood waste.

[369] www.legis.md/cautare/getResults?doc_id=96742&lang=ro
[370] www.legis.md/cautare/getResults?doc_id=102107&lang=ro
[371] siamd.gov.md
[372] www.madrm.gov.md/ro/content/tehnologia-informa%C8%9Biei-%C8%99i-comunica%C8%9Biilor
[373] www.madrm.gov.md/ro
[374] statistica.gov.md/index.php?l=ro
[375] statistica.gov.md/public/files/Metadate/Mediul_inconjurator.pdf
[376] statbank.statistica.md/pxweb/pxweb/ro/10%20Mediul%20inconjurator/10%20Mediul%20inconjurator__MED040__Intreprinderi/?rxid=e87671c5-56a9-42d1-a7d6-dd0671acb8eb

ROMANIA

LEGAL BASIS

The basis for waste regulations in Romania is the Law on the waste regime[377] (No. 211/2011). Article 7 of the Law approves the European List of Waste (p. 15), aligning the Romanian with the EU classification.

The Law on the management of packaging and packaging waste[378] (No. 249/2015) establishes an extended producer responsibility for producers of packaging and packaged products including wooden packaging.

SECTORAL CLASSIFICATION

Most of Romanian waste is landfilled and large gaps exist in material and energy recovery (Olaru & Zecheru, 2016).

STATISTICAL CLASSIFICATION

Data on hazardous and non-hazardous wood waste (EWC-Stat code 07.5) is available by treatment operation[379] and by NACE Rev. 2 economic activity[380] on the website of the National Environmental Protection Agency[381] (NEPA). NEPA is responsible for collecting and processing the data as well as for reporting to the European Union.

Data on construction and demolition (C&D) waste is reported annually to the Local Environmental Protection Agencies, by stakeholders involved in the waste management. They process the data and send it to NEPA, where it is centralized. C&D waste statistics are produced based on a combination of the reported data and statistical estimates. (Musuroaea *et al.*, 2017)

[377] www.dreptonline.ro/legislatie/legea_211_2011_regimul_deseurilor.php
[378] www.afm.ro/main/legislatie_taxe_si_contributii/legea_249_2015.pdf
[379] www.anpm.ro/documents/12220/46702649/Tratarea+deseurilor+pe+categorii+de+deseuri%2C+periculozitate+si+operatiuni+_cf.+Reg.+2150+_an+2018.xlsx/46ef2845-89c2-4e20-a8e5-b545d6ec57eb
[380] www.anpm.ro/documents/12220/46702649/Generarea+deseurilor+pe+categorii+de+deseuri%2C+periculozitate+si+diviziuni+CAEN+_cf.+Reg.+2150+_an+2018.xlsx/790947d4-4d75-48d4-a149-2957fc029857
[381] www.anpm.ro/deseuri

RUSSIAN FEDERATION

LEGAL BASIS

The basis for Russian waste regulations is provided by the Law on production and consumption waste[382] (No. 169, 2000, as amended in 2020). In Russia, waste is classified according to the Federal Waste Classification Catalogue[383] (FWCC) as approved by the Order on the approval of the Federal Waste Classification Catalogue[384] (No. 242, 2017). The FWCC provides a thirteen-digit code for each waste class. Wood waste is included as wood waste from logging (1 52-1 54), untreated and treated wood waste (3 05) and waste from wooden products (4 04).

The thirteenth digit of the FWCC indicates the class of hazard to the environment. There are five hazard classes, whereby Hazard Class I wastes are deemed the most hazardous and Hazard Class V wastes are considered practically non-hazardous. Hazard Class 0 relates to wastes for which the hazard class has not been established. Wastes categorized as Hazard Classes I to IV require a license from the Ministry of Natural Resources and Environment[385] for the proposed waste management activity. An example of FWCC and LoW codes correspondence is shown for tree stumps (Table 11).

Table 11: Russian FWCC and European LoW codes correspondence for wood waste

Description of Waste Type	Source	FWCC code	FWCC Hazard Class	Equivalent EWC Code (* = hazardous)
Tree stumps	Preparatory works	173 001 02 01 00 5	5	02 01 07

Source: South Stream, 2014

The Law on production and consumption waste permits landfilling of some Hazard Class III waste and all Hazard Class IV waste.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

In Russia, the Ministry of Natural Resources and Environment[386] is responsible for waste management activities including data collection and reporting. Waste data is collected through the unified state information system EGIS WOIT[387]. The Federal Service for Supervision of Natural Resources[388] issues waste statistics that are disaggregated by federal subject, by treatment method and by FWCC code[389].

[382] docs.cntd.ru/document/901711591
[383] kod-fkko.ru/spisok-othodov/
[384] docs.cntd.ru/document/542600531
[385] www.mnr.gov.ru/en/
[386] www.mnr.gov.ru/en/
[387] uoit.fsrpn.ru/
[388] rpn.gov.ru/
[389] rpn.gov.ru/activity/regulation/help/

SAN MARINO

LEGAL BASIS

The basic waste law in San Marino is the Waste Management Regulation[390] (No. 46, 2013). The Regulation gives the responsibility for municipal solid waste collection and management to the Autonomous State Company for Public Services[391] (AASS). Moreover, an obligation to hand over wooden packaging waste to waste collection centers is established by the Regulation.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

Data on waste collection by waste streams is available on the AASS website[392]. Wood waste is not included there specifically.

[390] extwprlegs1.fao.org/docs/pdf/smr186987.pdf
[391] www.aass.sm/site/home.html
[392] www.aass.sm/site/home/ambiente/dati-di-raccolta/2020.html

SERBIA

LEGAL BASIS

Waste regulations in Serbia are based on the Law on Waste Management (No. 36/2009), which includes the Law on Management of Packaging and Packaging waste. One of the objectives of the laws is an enhanced separation and recycling of waste streams (Ilic & Nikolic, 2016). The Serbian Waste Catalogue (No. 29/2010) is identical with the European List of Waste (p. 15), aligning the Serbian to the EU classification.

SECTORAL CLASSIFICATION

Wood waste occurring during the manufacture of wood-based products is used in the production of pellets, wood-based panels and heat. Post-consumer wood is not recovered for panel production. Construction and demolition wood waste is mostly sold to private consumers e.g., workers on the construction sites. Smaller quantities are used directly by construction and demolition companies or private households for heating purposes. Municipal wood waste is usually disposed of next to containers or in municipal landfills, where it is picked up for private heating purposes.

Source: Branko Glavonjic, personal communication, 2021

STATISTICAL CLASSIFICATION

The Environmental Protection Agency[393] issues statistics on waste quantities and types in Serbia[394]. All waste generators and owners except for households are required to submit annual waste reports through a waste database[395]. The reporting of waste statistics to Eurostat[396] is under the responsibility of the Republic Statistical Office[397].

[393] www.sepa.gov.rs/index.php

[394] www.sepa.gov.rs/index.php?menu=2017315&id=20023&akcija=redirect&where=www.nriz.sepa.gov.rs/TeamsPublic/teamssr.aspx?FormName=WasteGeneratedperYearForm

[395] www.hazardouswaste-serbia.info/fileadmin/inhalte/haz_waste/pdf/HWM_Plan_draft_2017-04-28.pdf

[396] ec.europa.eu/eurostat/news/themes-in-the-spotlight/western-balkans-2019

[397] www.rzs.rs.ba/front/category/132/

SLOVAKIA

LEGAL BASIS

The basis for waste regulations in the Slovak Republic is the Act on waste[398] (No. 79, 2015). It sets objectives for the Waste Management Plan in Article 9 of the Act, including an enhanced management of specific waste streams and efforts to increase reuse and recycling. The Waste Management Plan for 2021 to 2025 is currently under review[399] (January 2021). The Law establishing the Waste Catalogue[400] (No. 365, 2015) adopts the European List of Waste (p. 15), aligning the Slovakian to the EU classification.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

Slovakia introduced a unified Waste Management Information System[401] (ISOH) in 2018 under responsibility of the Ministry of the Environment[402]. It comprises the former Slovak information system, statistical surveys on waste management by the Slovak Statistical Office[403] and third-party information systems. ISOH collects data on waste originators and waste disposal facilities. It also allows for monitoring the fulfillment of the Waste Management Plan objectives. The Statistical Office is responsible for processing the data and issuing waste statistics and reports. Waste statistics are available by waste tape and by treatment method. No data is available there specifically on wood waste quantities[404].

[398] www.minzp.sk/files/sekcia-enviromentalneho-hodnotenia-riadenia/odpady-a-obaly/registre-a-zoznamy/act-no-79_2015-on-waste.pdf
[399] www.enviroportal.sk/sk/eia/detail/program-odpadoveho-hospodarstva-slovenskej-republiky-na-roky-2021-2025
[400] www.slov-lex.sk/pravne-predpisy/SK/ZZ/2015/365/
[401] www.isoh.gov.sk/en/about.html
[402] www.minzp.sk/
[403] slovak.statistics.sk/
[404] statdat.statistics.sk/cognosext/cgi-bin/cognos.cgi?b_action=xts.run&m=portal/main.xts&m_productLocale=sk&m_contentLocale=sk&refresh=

SLOVENIA

LEGAL BASIS

The Decree on Waste Regulation[405] (No. 37/2015) provides the legal basis for waste management. Article 4 of the Decree approves the European List of Waste (p. 15), aligning the Slovenian to the EU classification.

The Decree on the processing of non-hazardous waste into solid fuels[406] (No. 96/2014) applies to biomass waste including wood waste. Wood waste is classified into four categories (Table 12). Since only non-hazardous waste may be processed into solid fuels, limit values[407] apply for contamination levels of treated wood waste.

Table 12: Wood waste classification in Slovenia according to the Decree on the processing of non-hazardous waste into solid fuels

Biomass category	Definition	Types of wood waste
1	Non-hazardous wood waste	Uncontaminated, mechanically treated wood
2	Partially contaminated biomass	Painted, coated and varnished wood
3	Other non-hazardous biomass waste	Wood treated with coatings containing halogenated hydrocarbons
4	Hazardous biomass waste	Wood treated with wood preservatives (LoW code 170204*)

Source: Vimpolsek *et al.*, 2014

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Slovenian Statistical Office[408] collects and processes waste data from the waste management information system IS-Odpadki[409] and publishes waste statistics[410]. Waste processors are required to report waste quantities annually through IS-Odpadki. Data on hazardous, non-hazardous and packaging wood waste is available by waste source and by treatment operation in the Statistical Office's database[411].

[405] www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2015-01-1513?sop=2015-01-1513
[406] www.pisrs.si/Pis.web/pregledPredpisa?id=URED6504
[407] The limit values are as follows (in mg/kg): As 2; Cu 20; F 100; Cd 2; Cl 600; Cr 30; PCP 3; Pb 30; PCB 5; Hg 0.4
[408] pxweb.stat.si/SiStat/en
[409] okolje.arso.gov.si/odpadki/
[410] www.stat.si/StatWeb/File/DocSysFile/11062/27-180-3-ME.pdf
[411] pxweb.stat.si/SiStatData/pxweb/en/Data/-/2706101S.px

SPAIN

LEGAL BASIS

The Decree on the waste recovery and elimination operations and the European Waste List[412] (No. 304, 2002) contains the European List of Waste (p. 15), aligning Spanish classification codes for waste wood with the EU ones. Reduction targets of municipal waste fractions going to landfills are set by the Decree on disposal of waste by depositing it in a landfill[413] (No. 646, 2020) that includes increasingly ambitious targets over time.

The Decree on the transfer of waste within the territory of the State[414] (No. 553/2020) impacts wood waste recycling by extending reporting and documentation obligations to non-hazardous waste which formerly only applied to hazardous waste.

SECTORAL CLASSIFICATION

There is no national classification system for wood waste or recovered timber in Spain. Wood waste management plants usually classify it according to the European List of Waste (Llana *et al.*, 2020). Based on the origin of waste wood streams, expressed in LoW codes, recyclers decide on the appropriate treatment of the wood waste for material recovery. Limit values of hazardous substances are examined on site. Most medium and big cities in Spain are increasingly separating wood waste from other bulky waste (e.g. furniture), however some municipalities continue to dispose of wood waste in landfills.

Source: Eduardo Botín, personal communication, 2020

STATISTICAL CLASSIFICATION

Waste quantities are reported yearly by waste managers to the regional agencies in LoW code format. The data is aggregated and published by the National Statistics Institute[415] (INE). Data on wood waste (EWC-Stat code 07.5) is available by economic activity following the National Classification of Economic Activities[416] (CNAE) that corresponds to the NACE Rev. 2 classification (p. 17).

[412] www.boe.es/eli/es/o/2002/02/08/mam304
[413] www.boe.es/buscar/doc.php?id=BOE-A-2020-7438
[414] www.boe.es/buscar/act.php?id=BOE-A-2020-6422
[415] www.ine.es/en/index.htm
[416] www.cnae.com.es/

SWEDEN

LEGAL BASIS

The basis of Swedish waste regulations is provided by the Environmental Code[417] (No. 808, 1998) and the Waste Ordinance[418] (No. 614, 2020). Annex 3 of the Waste Ordinance contains the European List of Waste (p. 15), aligning Swedish classification codes for waste wood with the EU ones. Moreover, Section 10 of the Ordinance requires separate collection of six demolition waste streams (wood; minerals consisting of concrete, bricks, tiles, ceramics or stone; metal; glass; plastic and plaster).

The Ordinance on Producer Responsibility for Packaging[419] (No. 1463, 2018) requires producers to provide or join a collection system which takes operational and financial responsibility for the collection and treatment of packaging waste, including wooden packaging. Wood waste is considered a biofuel eligible for green certificates from electricity production according to the Ordinance on Electricity Certificates[420] (No. 1480, 2011).

SECTORAL CLASSIFICATION

Wood waste is usually sorted at source into untreated and treated wood to facilitate material and energy recovery.[421] In the construction sector, there is the Construction Product Classification System[422]. Its use is not mandatory by law, but in practice is required to sell construction products on the Swedish market, including products containing recycled materials. There, two types of criteria are included, one for chemical content and life-cycle aspects[423] and one for social responsibility[424]. Based on these criteria, "recommended" products shall include more than 50% of renewable raw materials or more than 50% of recycled materials. As regards wood products, they should be PEFC (p. 22) or FSC (p. 21) certified or contain wood species from documented sustainable forestry. "Accepted" products contain less than 50% of renewable raw materials, less than 50% of recycled materials and no information about sustainably sourced wood or wood species or origin in the CITES appendix for endangered species[425] containing certificates for legal harvesting. Limit values for chemical contents apply for both "Recommended" products[426] and "Accepted" products[427].

[417] www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/miljobalk-1998808_sfs-1998-808

[418] www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/avfallsforordning-2020614_sfs-2020-614

[419] www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20181462-om-producentansvar-for_sfs-2018-1462

[420] www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20111480-om-elcertifikat_sfs-2011-1480

[421] www.avfallsverige.se/fileadmin/user_upload/Publikationer/SAH_2020.pdf

[422] byggvarubedomningen.se/

[423] byggvarubedomningen.se/globalassets/bedomningar/kriterier-5.0.pdf

[424] byggvarubedomningen.se/globalassets/social-hallbarhet/kriteriedokument_sociala-1.0.pdf

[425] cites.org/eng/app/index.php

[426] Limit values for "Recommended" products are as follows: persistent, bioaccumulative and toxic organic substances ≤0.01%; very persistent and very bioaccumulative organic substances ≤0.01%; Pb in natural products ≤0.01%; Hg in natural products ≤0.25 mg/kg, Cd in natural products ≤0.001%; volatile organic compounds ≤1%

[427] Limit values for "Accepted" products are as follows: persistent, bioaccumulative and toxic organic substances ≤0.1%; very persistent and very bioaccumulative organic substances ≤0.1%; Pb ≤0.1%; Hg in natural products ≤2.5 mg/kg, Cd ≤0.01%; volatile organic compounds ≤10%

STATISTICAL CLASSIFICATION

The Swedish Environmental Protection Agency[428] is the authority responsible for waste statistics and for reporting to the EU. Data on wood waste (EWC-Stat code 07.5) is divided by hazardousness (hazardous, non-hazardous) as well as by treatment (pre-treatment, material recycling, energy recycling, composting, digestion, recycling as construction material, backfilling, soil dispersal, combustion without energy recovery, landfill).[429]

In addition, Avfall Sverige[430], the municipalities' industry association for waste management, produces yearly national statistics on household waste in Sweden.[431] The waste management data and waste quantities are provided by municipalities, municipal companies and waste facilities through the Avfall Web statistics system.[432]

[428] www.swedishepa.se/
[429] www.naturvardsverket.se/Documents/publ-filer/6900/978-91-620-6932-2.pdf?pid=26946
[430] www.avfallsverige.se/om-oss/
[431] www.avfallsverige.se/kunskapsbanken/avfallsstatistik/
[432] www.avfallsverige.se/kunskapsbanken/avfall-web/

SWITZERLAND

LEGAL BASIS

The Ordinance on the avoidance and the disposal of waste[433] (No. 814.600, 2015) constitutes the basis of Swiss waste law. The Swiss "types of waste" and their four-digit codes can be found in Annex 1 of the Ordinance, including four wood waste types as part of class 6, biogenic waste (Table 13). In addition, Annex 1 of the Ordinance on Lists for Waste Movements[434] (No. 814.610.1, 2005) contains the European List of Waste (p. 15), aligning the Swiss to the EU classification for export purposes.

Table 13: Wood waste types in Switzerland according to the Ordinance on the avoidance and the disposal of waste

Code	Waste type	Examples of common wood waste
6301	Natural wood	Waste from forestry activities, sawdust, leftover wood from sawmills
6302	Residual wood	Production waste from sawmills, carpenters' workshops or furniture factories, untreated wood offcuts from building sites (scaffolding planks, struts)
6202	Waste wood	Wooden building parts, wooden packaging (crates, palettes), wooden furniture
6101	Problematic wood residues	Wood treated with wood protection agents, laminated wood waste, mixtures of problematic wood residues and other wood

Sources: Ordinance on the Avoidance and the Disposal of Waste; Federal Office for the Environment, 2019

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

Wood waste is included in waste statistics as part of "other waste subject to control"[435]. Data is available for domestic, import and export quantities by disposal method. Waste companies report the waste quantities via veva-online.ch, which are processed by the Federal Office for the Environment[436] to generate waste statistics.

[433] www.admin.ch/opc/en/classified-compilation/20141858/index.html
[434] www.admin.ch/opc/fr/classified-compilation/20021081/index.html
[435] www.bafu.admin.ch/dam/bafu/de/dokumente/abfall/statistik/statistik_anderekontrollpflichtigeabfaelle2007-2014.pdf.download.pdf/statistik_anderekontrollpflichtigeabfaelle2007-2016.pdf
[436] www.bafu.admin.ch/bafu/en/home.html

TAJIKISTAN

LEGAL BASIS

The basis for waste regulations in Tajikistan is the Law on industrial and consumer waste[437] (2002, last amended in 2011). No waste classification is included in the Law.

SECTORAL CLASSIFICATION

In Tajikistan, the role of the forestry sector in providing commercial timber is insignificant. Commercial timber from abroad comes mainly in processed form from the Russian Federation.

STATISTICAL CLASSIFICATION

The Agency on Statistics[438] under the President of the Republic of Tajikistan is responsible for compiling waste statistics. No data is available specifically on wood waste.

[437] majmilli.tj/%D2%9B%D0%BE%D0%BD%D1%83%D0%BD%D0%B8-%D2%B7%D1%83%D0%BC%D2%B3%D1%83%D1%80%D0%B8%D0%B8-%D1%82%D0%BE%D2%B7%D0%B8%D0%BA%D0%B8%D1%81%D1%82%D0%BE%D0%BD-%D0%B4%D0%B0%D1%80-%D0%B1%D0%BE%D1%80%D0%B0%D0%B8-54/

[438] stat.tj/en

TURKEY

LEGAL BASIS

The basis for waste regulations in Turkey is the Waste Management Regulation[439] (No. 29314, 2015). Annex 4[440] of the Regulation contains the European List of Waste (p. 15), aligning the Turkish to the EU classification. In the Waste List, hazardous waste, to which hazardous properties listed in annex 3 apply, is marked with an asterisk (*). In addition, waste which is considered hazardous, but to which the hazardous properties listed in annex 3 do not apply, is marked with an (A), while a hazardousness assessment is mandatory for waste marked with an (M). Moreover, the Regulation introduces an extended producer responsibility for several waste streams including packaging waste.

SECTORAL CLASSIFICATION

The hazardous waste classification guide[441] issued by the Ministry of Environment and Urbanization[442] distinguishes the categories A, B and C for wood waste (Table 14). All wood waste fractions marked with an asterisk (*) are considered category C wood.

Table 14: Wood waste categories in Turkey according to the hazardous waste classification guide

Category	Definition	Examples of wood waste categories
A	Natural or mechanically processed wood waste	Pallets, shipping crates, untreated cable reels, furniture made of untreated wood, untreated wood used in construction
B	Painted, primed, glued wood waste without wood preservatives or halogenated compounds	Construction and demolition wood waste, floor and wall panels, wooden furniture, mixed bulky wood, coated wooden packaging
C	Waste wood treated with halogenated organic materials including PCB or other wood preservatives	Impregnated construction wood, impregnated furniture, industrial floors and work benches, railway sleepers, treated cable reels

Source: webdosya.csb.gov.tr/db/cygm/icerikler/c-lt3-20180201134617.pdf

Wood recycling options in Turkey often depend on the size of wood-processing companies. Large companies are more likely to possess the necessary technology and infrastructure for wood recycling[443].

[439] www.resmigazete.gov.tr/eskiler/2015/04/20150402-2.htm
[440] www.resmigazete.gov.tr/eskiler/2015/04/20150402-2-1.pdf
[441] webdosya.csb.gov.tr/db/cygm/icerikler/c-lt3-20180201134617.pdf
[442] csb.gov.tr/en
[443] core.ac.uk/download/pdf/267827395.pdf

STATISTICAL CLASSIFICATION

The Turkish Statistical Institute[444] is responsible for compiling waste statistics which are based on data from government representatives and the private sector. Waste statistics are available for municipal and industrial waste by treatment method in the Data Portal[445] of the Turkish Statistical Institute. There, no data is available specifically for wood waste.

[444] www.tuik.gov.tr/Home/Index#
[445] data.tuik.gov.tr/Kategori/GetKategori?p=Cevre-ve-Enerji-103

TURKMENISTAN

LEGAL BASIS

The basis for waste regulations in Turkmenistan is the Law on waste[446] (No. 2/59, 2015, last amended in 2019), which establishes five hazard classes for waste:

- Class I - extremely hazardous waste
- Class II - highly hazardous waste
- Class III - moderately hazardous waste
- Class IV - low-hazardous waste
- Class V – non-hazardous waste.

Waste of hazard classes I, II and III are subject to registration. Wood is not specifically mentioned there.

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The State Committee on Statistics of Turkmenistan[447] is responsible for compiling waste statistics.

[446] minjust.gov.tm/mcenter-single/147
[447] www.stat.gov.tm/

UKRAINE

LEGAL BASIS

The basis for waste regulations in Ukraine is the Law on waste[448] (No. 36-37, 1998, last amended in 2020). Regarding hazardous waste management, four hazard classes are defined: class I (extremely hazardous), class II (highly hazardous), class III (moderately hazardous) and class IV (non-hazardous). Apart from the hazardousness assessment, waste is classified according to the State Waste Classifier DK 005-96[449] (No. 89, 1996, last amended in 2008). The Classifier distinguishes 37 groups of waste by economic activity class, origin, type and hazard class through a seven-digit code. The first four characters of the code, which describe the economic activity class, are harmonized with the NACE classification (p. 17). (Zhukovsky *et al.*, 2016)

Wood waste is included in the State Waste Classifier under class 200 (wastes from the manufacture of wood and products from wood and bark, products from straw and other materials).

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Ukrainian State Statistics Service[450] is responsible for compiling waste statistics[451]. Data collection occurs through a statistical survey for companies involved in waste generation, collection and disposal that covers all possible sources of waste (economic activity and households) and all types of waste except for radioactive waste. Industrial waste quantities are available by NACE Rev. 2 economic activity (p. 17). The waste codes for the different types of waste are harmonized with EWC-Stat Rev. 3 (p. 16). Waste quantities are available by disposal operation and by types of waste according to the State Waste Classifier[452].

[448] zakon.rada.gov.ua/laws/show/187/98-%D0%B2%D1%80#Text
[449] www.ukrstat.gov.ua/klasf/nac_kls/op_dk005_2016.htm
[450] ukrstat.org/
[451] ukrstat.org/uk/metaopus/2014/0124002_2014.htm
[452] www.ukrstat.gov.ua/operativ/menu/menu_u/ns.htm

UNITED KINGDOM

LEGAL BASIS

In the United Kingdom (UK) the legal framework for waste policy is devolved to the country governments of England, Wales, Scotland and Northern Ireland. All waste has to be classified before it is collected, disposed or recovered in order to identify the controls that apply to the movement of the waste and to identify suitable authorized waste management options. In the assessment criteria, waste wood is identified as 'Mirror Hazardous' i.e. that it is potentially hazardous. Mirror entries require a complete assessment to be undertaken to determine whether or not the waste is hazardous. The assessment involves the nature of the hazardous substances that are present, as well as their concentration and chemical classification. The steps for an accurate description of all wastes are outlined in the Technical Guidance on Waste Classification[453] issued by the Environment Agency[454] (EA). The Quick Guide 43_17 on Waste Wood[455] by the EA defines wood waste as any non-virgin timber and associated residues such as offcuts, shavings, chippings and sawdust, either treated or not treated. Where virgin wood is mixed with waste wood such as pallets, doors or frames, the mixed load is considered waste. Treated waste wood is wood that has been treated by being injected, impregnated, sprayed, infused (soaked) or surface coated (varnishes, paints, glues and veneers) with any organic or inorganic substances (Reindahl Andersen *et al.*, 2018).

Regulatory position statements (RPS) are issued by the EA for certain activities to explain why no environmental permit is needed for those activities (Environment Agency, 2020). RPS 207 on classifying waste wood from mixed waste wood sources[456] states that unassessed treated or mixed waste wood can be classified as non-hazardous waste in two cases. First, when it is destined for incineration at an incinerator or co-incinerator compliant with the European Industrial Emissions Directive (p. 19) Chapter IV, or second when it will be used for the manufacture of board. The hazardous waste classification applies to all treated or mixed wood waste which do not comply with RPS 207. Waste wood that is recognized as hazardous is segregated and consigned as hazardous destined to licensed facilities. RPS 207 will be withdrawn in 2021. After the removal of RPS 207, all unassessed waste wood must be classified as hazardous. This poses a risk to the material recycling of mixed wood waste containing minor fractions of hazardous waste.

Source: Alastair Kerr, personal communication, 2020

SECTORAL CLASSIFICATION

A classification of wood waste developed by the Wood Recyclers Association[457] (WRA) categorizes waste steams into four grades, based on their quality. The grading system is similar to the German Waste Wood Ordinance (p. 49). These grades provide a standard specification for technical and commercial characteristics of the recovered wood for the end-use market (Table 15).

[453] www.gov.uk/government/publications/waste-classification-technical-guidance
[454] www.gov.uk/government/organisations/environment-agency
[455] biomass-suppliers-list.service.gov.uk/Content/Documents/2017%2003%2006%20Waste%20Wood%2043_17%20-%20EA%20guidance.pdf
[456] www.gov.uk/government/publications/classifying-waste-wood-from-mixed-waste-wood-sources-rps-207/classifying-waste-wood-from-mixed-waste-wood-sources-rps-207
[457] woodrecyclers.org/

Table 15. Grades of waste wood in the United Kingdom according to the Wood Recyclers Association

Grade	Typical Markets	Typical Sources of raw material for recycling	Typical Materials	Typical non-wood content prior to processing	Notes
Grade A – Clean un-treated	A feedstock for the manufacture of professional and consumer products such as animal bedding, equine and landscaping surfacing. May also be used as a fuel in domestic and non-IED Chapter IV biomass installations and for the manufacture of pellets and briquettes.	Distribution, Retailing, Packaging and Secondary manufacture, e.g. joinery and pallet reclamation.	Solid softwood and hardwood. Packaging waste, scrap pallets, packing cases and cable drums. Process off-cuts from the manufacture of untreated products.	Nails and metal fixings. Minor amounts of paint and surface coatings.	Is a waste for the requirements of Waste Management Regulations. Does not require an IED Chapter IV installation and should not contain any treated or low-grade material.
Grade B – Industrial waste wood	A feedstock for industrial wood processing operations such as the manufacture of panel board products.	As Grade A, plus construction and demolition operations, skip operators, transfer stations.	May contain up to 60% Grade A material as above plus building and demolition materials and domestic furniture made from solid wood.	Nails and metal fixings. Some paints, plastics, glass, grit, coatings, binders and glues. Limits on treated or coated materials as defined by end users and IED.	The Grade A content is not only costly and difficult to separate, it is essential to maintain the quality of feedstock for chipboard manufacture and PRN revenues. Some feedstock specifications contain a 5% to 10% limit on former panel products such as chipboard, MDF and plywood. Should not contain lower grade material. Is a waste for the requirements of Waste Management Regulations. Will require an IED Chapter IV compliant installation for biomass.
Grade C – Municipal waste wood	For use in the IED Chapter IV biomass installations and for panel board in controlled volumes.	All above plus municipal collections, transfer stations and HWRCs.	All of the above plus fencing products, flat pack furniture made from board products and DIY materials.	Nails and metal fixings. Paints, coatings and glues, paper, plastics and rubber, glass, grit. Coated and treated timber (non CCA or creosote).	Mainly suitable for IED Chapter IV compliant biomass installations, but also suitable for panel board manufacture with correct processing and blending. Is a waste for Waste Management Regulations.
Grade D – Hazardous waste wood	Requires disposal at facilities licensed to accept hazardous waste.	All of the above plus Agricultural fencing, trackwork and transmission pole contractors.	Agricultural fencing, transmission poles, railway sleepers, cooling towers.	Copper chrome arsenic (CCA) preservation treatments and creosote.	Is a waste for Waste Management Regulations. Requires disposal in a process regulated to take hazardous waste.

Source: Wood Recyclers Association, 2009

STATISTICAL CLASSIFICATION

Waste statistics are issued by the Government Statistical Service[458]. **Waste from Households** (WfH) is the agreed harmonized UK indicator used to report household recycling. It complies with the European Waste Framework Directive (p. 18). All UK countries base the WfH indicator on output from the WasteDataFlow[459] database, the web-based system for municipal waste data reporting by UK local authorities to government. **Biodegradable municipal waste** (BMW) volumes are calculated in accordance with the European Landfill Directive (p. 18). This approach is used by all UK countries. Data is collated from mandatory returns made by landfills to the Environment Agencies of each of the four UK countries. Waste streams are split by LoW codes, as determined by landfill operators. For these reporting needs, the UK countries have agreed a set of LoW codes to represent 'municipal waste'. UK estimates for the **recovery/recycling from packaging** streams have been compiled in accordance with the European Packaging and Packaging Waste Directive (p. 18) reporting requirements. All estimates are made at a UK level, there is no disaggregation by individual UK countries. Estimates of recycled packaging waste quantities are based on Packaging Recovery Notes (PRN) and Packaging Export Recovery Notes (PERN) held in the National Packaging Waste Database[460]. The Recovery Notes are electronically issued documents which provide evidence that the waste packaging material has been recycled into a new product. Whilst recovered packaging is counted, there remains uncertainty around the total packaging waste in circulation. Study-based estimates such as Woodflow 2025[461] estimate the total packaging waste arising. UK estimates of non-hazardous **construction and demolition** (C&D) waste are calculated in accordance with the European Waste Framework Directive (p. 18). Whilst the absolute waste volume estimates are subject to a relatively high level of uncertainty, sensitivity analysis suggests there is not a significant impact on the final

[458] gss.civilservice.gov.uk/
[459] www.wastedataflow.org/
[460] npwd.environment-agency.gov.uk/
[461] www.valpak.co.uk/more/material-flow-reports/woodflow-2025

recovery rate. Despite efforts made to synchronize approaches across UK countries, methodologies are not identical. UK estimates for waste generation from **commercial and industrial activities** (C&I) sectors have been compiled in accordance with the European Waste Statistics Regulation (p. 19) reporting requirements. For the purpose of this statistics release, C&I is defined as a specific collection of NACE economic activities (p. 17). Data on total generation of wood waste (EWC-Stat Code 07.5) is made available by the Government Statistical Service, disaggregated by economic activity (NACE codes) and method of treatment (Department for Environment, Food & Rural Affairs, 2020).

UNITED STATES OF AMERICA

LEGAL BASIS

There is no federal waste classification in the United States. Several States have implemented specific pieces of wood waste legislation. For example, in California treated wood waste is subject to hazardous waste regulations and must be disposed of in hazardous waste landfills.[462] Maryland has established natural wood waste recycling facilities for unprocessed wood waste.[463] In North Carolina, a landfill ban for wooden pallets is in place.[464]

SECTORAL CLASSIFICATION

Many case studies, examples of best practices and standards exist in the United States (Howe *et al.*, 2013). However, the practice of wood waste recovery and sorting is characterized by a high heterogeneity between States[465]. The Environmental Protection Agency[466] (EPA) maintains a list of State and local waste characterization studies, however reports are not available for all states.[467]

STATISTICAL CLASSIFICATION

In EPA waste statistics[468], wood waste is disaggregated into wood and wood packaging (including pallets). Furthermore, the statistics generally distinguish construction and demolition waste (C&D) from municipal solid waste (MSW). The U.S. Forest Service[469] estimates wood waste quantities based on the EPA statistics and estimates on wood combustion and recovery quantities (Howe *et al.*, 2013).

[462] www.wastetodaymagazine.com/article/california-treated-wood-waste-regulations-hazardous/
[463] mde.maryland.gov/programs/LAND/SolidWaste/Documents/NWWRF_Factsheet.pdf
[464] naldc.nal.usda.gov/download/22763/PDF
[465] Kathryn Fernholz, personal communication, 2021
[466] www.epa.gov/
[467] www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management-0#USState
[468] www.epa.gov/facts-and-figures-about-materials-waste-and-recycling
[469] www.fs.usda.gov/

UZBEKISTAN

LEGAL BASIS

The basis for waste regulations in Uzbekistan is the Law on waste[470] (No. 362-II, 2002). The national strategy for waste management currently focuses on public-private partnerships in order to build waste infrastructure[471].

SECTORAL CLASSIFICATION

STATISTICAL CLASSIFICATION

The Department of Coordination and Organization of Waste Management of the State Committee on Ecology and Environmental Protection[472] maintains a statistical database on waste management[473]. Waste statistics are published by the State Statistics Committee[474]. No data is available for wood waste in particular.

[470] lex.uz/ru/docs/-42423
[471] lex.uz/acts/-5023628
[472] www.uznature.uz/en
[473] www.uznature.uz/en/activity/view?numer=808
[474] stat.uz/en/

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