24. SLOVENIA

24.1 Legal Framework – Waste Management Plans and Strategies

24.1.1 National Legislation concerning CDW

Current national legislation on waste in generally are [288]:

– Environmental Protection The Decree on Waste;
– The Decree on Waste - A framework decree governing waste management more specifically is the Decree on Waste5 of 31 December 2011.on Act which regulates the protection of environment from the impact of pollution as a prerequisite for sustainable development;
– The Decree on the management of waste arising from construction work;
– Decree on waste landfill11 of 22 February 2014;
– Decree on the implementation of the Regulation (EC) No. 1013/2006 on shipments of waste12 of 8 August 2007.

24.1.2 Waste management plans (WMP) and Strategies

Slovenia prepared its National Environment Protection Action Programme in 1999, which among others, includes details on the overall waste management. The National Environment Protection Action Programme is a framework underlying the adoption of the Strategic Guidelines on Waste Management and the preparation of several Operational Programmes which are as follows:

– Operational Programme for reduction and prevention of pollution caused by waste from the titanium dioxide production for the period from 2004 – 2007,
– Operational Programme for management of batteries and accumulators for the period 2003 – 2006,
– Operational Programme management of waste oils for the period from 2003 – 2006,
– Operational Programme disposal of polychlorinated biphenyls and polychlorinated terphenyls for the period from 2003 – 2006,
– Operational Programme for the management of packaging and packaging waste for the period from 2003 – 2007,
– Operational Programme for the construction waste management for the period 2004 – 2008.
– The targets set under the Operational Programme for the construction waste management for the period 2004 – 2008 were as follows:
    - ✓ separate collection at the source and reuse of at least 30 % of the construction waste,
    - ✓ strict separation of waste arising from the construction work and asbestos-containing construction waste from the other waste arising from the performance of construction works,
    - ✓ materials recovery (recycling) and use of building materials of at least about 40 % of construction waste,

- ✓ incineration or use as fuel wood in construction waste,
- ✓ reuse of around 40 % of construction waste from excavation,
- ✓ the use of residual waste from the processing of the construction waste (about 10 %) and of construction waste from excavation works (about 40 %) in terms of depositing it into or onto land as a waste recovery operation, namely as organic soil, i.e. to fill natural depressions or excavation spaces of surface installations within their rehabilitation,
- ✓ disposal of unusable waste residues from the processing of construction and demolition waste (20 %) and construction waste from excavation works (20 %) in landfills for non-hazardous waste and landfills for inert waste,
- ✓ disposal of construction waste containing asbestos waste – firmly bound asbestos waste – in landfills for non-hazardous waste.

24.1.3 Legal framework for sustainable management of CDW

Table 94. Legal framework for sustainable management of CDW.

Description	Level of occurrence (Yes/No) Key Scope/Exemptions	Year established and policy reference	Further details, information source, related web-site
National/regional obligation for selective demolition?	NO	n/a	n/a
National/regional sorting obligation (on-site or in sorting facility)?	No.	n/a	n/a
Obligation for separate collection and management of hazardous waste from C&D operations? Please specify	Yes. Asbestos is considered as hazardous waste. It needs special treatment and disposal.	▪ 2008 – Decree on the management of waste containing asbestos ▪ 2006 – Decree on the conditions for the disposal of materials containing asbestos in the demolition, reconstruction or maintenance of buildings and in the maintenance and decommissioning of	▪ http://www.pisrs.si/Pis.web/pregledPredpisa?id=URED4787 ▪ http://www.pisrs.si/Pis.web/pregledPredpisa?id=PRAV7057

		plants	
Related Green public procurement requirements	Yes.	• 2012 - Decree on green public procurement	Green public procurement is enforced for the public sector in Slovenia. In the construction segment, only provisions related to the construction of buildings are determined (with Annex 7 Basic environmental requirements for buildings). There is one provision mentioning the use of recycled materials: 'Tender for construction which will use more than 30 % of recycled construction materials shall be scored with additional points'. URL of Decree on green public procurement: http://www.pisrs.si/Pis.web/pregledPredpisa?id=URED5194 URL of Annex 7 Basic environmental requirements for buildings: http://pisrs.si/Pis.web/npb/2014-01-3639-2011-01-4404-npb5-p7.pdf

24.1.4 Targets

According with Deloitte document[288], National targets concerning CDW are set by the Decree on waste as the 70 % CDW recovery and recycling objective ('by 2020 the preparing for re-use, recycling and other material recovery, including backfilling operations using waste to substitute other materials, of non-hazardous construction and demolition waste excluding naturally occurring material defined in category 17 05 04 in the list of waste shall be increased to a minimum of 70% by weight'). For purposes of calculating the achievement, reference is made to the Commission Decision of 18 November 2011 establishing rules and calculation methods for verifying the fulfilment of the objectives set out in Article 11(2) of Directive 2008/98/EC of the European Parliament and of the Council.

24.1.5 End of Waste (EoW) status

24.2 Non legislative instruments (best practices, guidelines, recommendations…)

In this section, other instruments that may specify how the country is addressing the issue of CDW management are highlighted, as these instruments might be creating conditions for a sustainable management of CDW.

Table 95 Non legislative instruments.

Description	Level of occurrence (Yes/No) Key Scope/Exemptions	Year established and policy reference	Further detail, information source, related web-site
Building certification standards that cover CDW (e.g. BREEAM)	YES. 2 buildings in Slovenia are BREEAM	1990	URL of BREEAM website with filtered Slovenia:
BREEAM	certified		http://www.breeam.org/projects/explore/map.jsp?sectionid=0&projectType=&rating=&certNo=&buildingName=&client=&developer=&certBody=&assessor=&addressPostcode=&countryId=705&partid=10023&Submit=Search
Environmental taxes related to waste management **Waste disposal tax**	YES. Waste disposal tax is paid for environmental pollution due to waste disposal at inert waste landfills, at non-hazardous waste landfills and at hazardous landfills.	2014	URL to list of environmental taxes : http://www.fu.gov.si/en/taxes_and_other_duties/areas_of_work/environmental_taxes/ URL to details of tax for environmental pollution caused by waste disposal: http://www.fu.gov.si/fileadmin/Internet/Davki_in_druge_dajatve/Podrocja/Okoljske_dajatve/Opis/Podrobni_opis_Okoljska_dajatev_za_onesnazevanje_okolja_zaradi_odlaganja_odpadkov_na_odlagaliscih.pdf
Extended producer responsibility scheme in operation?	NO.	n/a	n/a

24.3 CDW management performance – CDW data

24.3.1 CDW generation data

EUROSTAT database reports the data shown in Table 96 for CDW generated between years 2010 and 2014.

Table 96. EUROSTAT CDW generation data.

	2010 [tons]	2012 [tons]	2014 [tons]
Mineral waste for construction	622.431	109.807	98.923
Metal wastes, ferrous	57.900	4.170	3.825
Metal wastes, non-ferrous	132	139	251
Glass wastes	553	3.851	3.449
Plastic wastes	3.338	274	189
Wood wastes	3.731	2.308	1.231
Total	**1.509.476**	**535.154**	**815.010**

24.3.2 CDW treatment data

Data published by EUROSTAT deals with different waste categories but becoming from all the economic activities. Therefore, only for the category "Mineral waste from construction", data can be considered reliable, as in the Table 97.

Table 97. EUROSTAT CDW treatment data

Mineral waste from construction [tons]	**2010**	**2012**	**2014**
Landfill / disposal (D1-D7, D12)	41.012	23.144	12.611
Deposit onto or into land	41.012	23.144	12.611
Land treatment and release into water bodies	0	0	0
Incineration / disposal (D10)	0	18	12
Incineration / energy recovery (R1)	2	974	0
Recovery other than energy recovery	645.203	288.404	511.724
Recovery other than energy recovery - backfilling	11.973	4.050	0
Recovery other than energy recovery - except backfilling	633.230	284.354	511.724
Total waste treatment	**686.217**	**312.540**	**524.347**

24.3.3 CDW exports/imports data

The Table 98 summarizes the official CDW export/import data gathered from the Statistical office of the Republic of Slovenia. Data represent the summarized amount of waste under Code 17 of the List of Waste, as no data was available for the Construction activity (Section F – Construction, NACE, Rev. 2). CDW import and export data are not broken down into hazardous and non-hazardous waste.

Table 98. Official CW generation data (Source:Deloitte).

Official CDW generation data		2008	2009	2010	2011	2012	2013
Export	Waste delivered abroad - exports outside the EU (tonnes)	n/a	575	652	1,095	378	221
	Waste delivered abroad - exports to the EU (tonnes)	20,247	3,656	3,435	17,292	12,985	20,824
Import	Waste from abroad - import from EU (tonnes)	n/a	n/a	69,328	98,017	131,339	136,889
	Waste from abroad - import outside the EU (tonnes)	n/a	n/a	60,831	20,943	22,143	16,027
Total		**20,247**	**4,231**	**134,246**	**137,347**	**166,845**	**173,961**

24.3.4 CDW treatment facilities data

According to EUROSTAT database about "Number and capacity of recovery and disposal facilities by NUTS 2 regions", in Slovenia there are;
– 0 landfill for inert waste,
– 0 landfill for non-hazardous waste,
– 0 landfill for hazardous waste.

24.3.5 Future projections of CDW generation and treatment

As observed during the ReBirth project, there are limitations to the statistics, especially considering waste from building demolition and renovation activities where the quantities are poorly reported, as well as regarding the reported quantities of waste disposed of on illegal dumps, or the use of recycled aggregates or products. Infact, the statistics say that, in Slovenia, more CDW is recycled than actually generated.

24.3.6 Methodology for CDW statistics

Statistical data on CDW is collected and analysed by the Statistical Office of Republic of Slovenia25. Statistical data concerning waste is gathered based on:
– The National Statistics Act,
– The Annual Programme of Statistical Surveys,
– The Decree on waste.

24.4 C&D waste management in practice

24.4.1 CDW management initiatives

The initiatives listed below were identified based on a review of the relevant literature and stakeholder interviews.

Table 99. CDW management initiatives (Source:Deloitte)

Description of initiative	Scope	Year established	National, regional, local (specify which local area/region)	Public sector and/or Industry lead organisation	Levels of performance e.g. tonnes recycled	Further information/ web-site
ReBirth project Slogan: Waste is the beginning of something new. The overall objective of the project was to contribute to an increased and improved recycling of industrial waste and construction/demolition waste in the construction sector. This was promoted through open, thoughtful, rational, timely and fact-based communication and open dialogue planned to raise awareness of recycling possibilities for industrial waste and building rubble in the construction industry at the national, regional and local levels.	C&D waste	2011	National, regional and local (in Slovenia).	Public sector and industry lead organisations were partners (Environment - LIFE Programme).	Unknown.	URL of the project: http://en.re-birth.eu/
SARMa project The main objective of the project was to develop a common approach to (a) sustainable aggregate resource management (SARM); and (b) sustainable supply mix (SSM) planning, at three levels: regional, national and transnational. The project objective was also to build the foundation for a Regional Centre on sustainable aggregates management and supply.	Aggregates (crushed stone, sand and gravel).	2011	Local, regional, transnational.	Several ministries, institutes and universities were partners (South East Europe Programme).	Unknown.	URL of the project: http://www.sarmaproject.eu/

24.4.2 Drivers / barriers to increase CDW recycling

Table 100. Drivers / barriers to increase CDW recycling

Factor/characteristic/element inCDW recycling chain	Drivers	Barriers
EoW status	Chamber of Commerce and Industry of Slovenia is representing construction stakeholders and is actively participating in discussions for legislation and regulation changes, including the EoW status.	According to interviewed stakeholders, there is no clear line between waste and End of Waste; the regulation should provide more specific definitions.
Legislation and regulation	Chamber of Commerce and	Several laws and decrees are

	Industry of Slovenia is actively participating in discussions for legislation and regulation changes.	governing waste segment in Slovenia, but the provisions are sometimes contradictory. According to interviewed stakeholders the Government should align the various laws and prepare a standard document that would govern waste.
Statistics	Cooperation between Slovenian Statistical Office and Slovenian Environment Agency at statistical research on waste generation, treatment and management. Also according to Annual Research Quality Report on Research for Waste Generation in 2013 Eurostat is committing for increasing the quality and comparability of data between member states and is therefore organizing various workshops.	Because of the unreconciled different decrees that govern waste management, the waste statistics is inconsistent (e.g. greater quantity of recycled CDW than actually generated). One of the underlying reasons is also that investors have no obligation to report on generated CDW if, pursuant to another legislation, they are obliged to prepare a Construction Waste Management Plan or obtain environmental permits.
Green procurement	A sound basis for the use of recycled CDW.	Provisions regarding the use of recycled CDW are not binding, but rather optional, with only provisions regarding the construction of buildings being defined (additional points for bidders claiming that recycled construction material will constitute more than 30% of all construction material used).
Waste Management Strategy		The last Operational Programme for Waste Management was for the period 2004 – 2008. According to the interviewed stakeholders Slovenia would need a new strategy with clear targets and prompt monitoring of status to boost a more sustainable waste management
Interest for CDW regulations	Chamber of Commerce and	According to the interviewed

	Industry of Slovenia and some other private Organizations are actively promoting reuse of CDW and changes of regulation.	stakeholders, there is a lack of interest at the Government level in regulating CDW

24.5 CDW sector characterization

24.5.1 CDW materials (CONCRETE, BRICKS, TILES AND CERAMIC, ASPHALT, WOOD, GYPSUM)

Product description and applications

No data found

Quantitative analysis

No data found

Recovery techniques

No data found

Environmental and economic impacts of CDW waste management

No data found

Drivers / barriers to increase recycling

See Section **Chyba! Nenalezen zdroj odkazů.**

24.5.2 Recycled materials from CDW

According with Deloitte document, the main CDW products are recycled aggregates. Slovenia has recycling plants that treat mostly R1 waste (recycling of by-products, waste and residues from extractive activities), R2 waste (recycling of CDW) and R4 waste (recycling of industrial waste). Aggregates produced from these plants are used for backfilling purposes, concrete production and other construction purposes.
End-of-Waste criteria for aggregates have not been established. So far, the criteria have been adopted for iron, aluminium, copper and glass, but, according to the provided information, the amounts of waste that comply with the EoW status are still not included in CDW generation reporting (statistics).
According to the desktop-research results and the interviews, no information is available on the subject of requirements and standards used for recycled aggregates. CDW processors are required to possess environmental permits, but no control has been established for CDW treatment and aggregate recycling otherwise required for recycled construction material to be legally sold on the market47. No other satisfactory information could be retrieved regarding materials recycled from CDW.

Provisions on the use of CDW-recycled materials from the Green Public Procurement regulation are optional (additional points are awarded to bidders that include in their tender more than 30 % recycled construction material of all material used).

24.5.3 Market conditions / costs and benefits

Slovenia provides a financial incentive for CDW recycling through waste disposal taxation. The tax is payable for waste put on industrial (state revenue) and public dumping grounds (revenue of local communities). The tax base is EUR 0.0022 per kg of inert waste, EUR 0.011 per kg of non-hazardous waste, and EUR 0.022 per kg of hazardous waste. Tax payers are landfill operators.

The initiatives for using CDW as secondary material are those mentioned in Section 6.1. CDW management initiatives.

Prices of recycled aggregates in Slovenia are lower than the prices of natural aggregates. When collecting construction waste from which recycled aggregates are produced, collectors charge more for mixed construction waste than for separated construction waste. The transportation of CDW to the processor and of recycled aggregate from the processor to the place of use has a large impact on the price. This is why, in practice, the recycling and use often take place on the site itself.