



WASTE AVOIDANCE AND RESOURCE RECOVERY REGULATIONS 2008

REVOCATION OF NOTICE – INFORMATION REQUIRED FOR AN ANNUAL RETURN OF LIABLE RECYCLERS

Under regulation 18D(3) of the *Waste Avoidance and Resource Recovery Regulations 2008*, the notice titled “Information Required For An Annual Return Of Liable Recyclers” published in the *Government Gazette* on 28 June 2019, is revoked and replaced with the following notice.

WASTE AVOIDANCE AND RESOURCE RECOVERY REGULATIONS 2008

INFORMATION REQUIRED FOR ANNUAL RETURN OF LIABLE RECYCLERS

PERSON WHO DESCRIBES INFORMATION REQUIRED FOR AN ANNUAL RETURN

I, Alistair Jones, in my capacity as the chief executive officer of the department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007*¹ (CEO) hereby describes in this notice the information relating to reportable waste² or recycling of reportable waste that is required to be provided in an annual return and the procedures to be followed to record and calculate or estimate that information pursuant to regulations 18C and 18D(1) of the *Waste Avoidance and Resource Recovery Regulations 2008*.

PERSON REQUIRED TO PROVIDE AND USE INFORMATION IN THIS NOTICE

In this notice, a person is a *liable person* as described under regulations 18B(1) and 18B(3) of the *Waste Avoidance and Resource Recovery Regulations 2008* if they are an occupier of a premises, whether or not that person holds a licence in respect of the premises –

- a) if reportable waste is treated, processed or sorted at the premises for the purposes of reprocessing, recycling or energy recovery; and
- b) if, as a result of that treatment, processing or sorting, at least 1,000 tonnes of reprocessed recycled or recovered material is produced in a financial year at the premises that –
 - i) needs no further processing and is ready for use as a production input or final products; or
 - ii) is to be exported from Western Australia.

For the purpose of this notice, these persons will be hereafter referred to as “liable recyclers”.

A liable recycler is subject to Part 3A of the *Waste Avoidance and Resource Recovery Regulations*

¹ The ‘department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007*’ is currently the Department of Water and Environmental Regulation.

² Regulation 18A of the *Waste Avoidance and Resource Recovery Regulations 2008* defines **reportable waste** to mean waste that is solid matter.

2008 pursuant to regulation 18B(1). Under regulation 18C of Part 3A, a liable recycler is required to make and lodge an annual return relating to reportable waste or the recycling of reportable waste containing information as required by this notice under regulation 18D.

PREMISES OR LICENSED LANDFILL

The liable recycler must inform the CEO in a form approved in writing by the CEO³ of the premises or the licensed landfill in respect of which the person is a liable person pursuant to regulation 18B(5)(b) of the *Waste Avoidance and Resource Recovery Regulations 2008*.

INFORMATION REQUIRED FOR THE ANNUAL RETURN – REGULATIONS 18C AND 18D

For the purposes of making an annual return under regulation 18C of the *Waste Avoidance and Resource Recovery Regulations 2008*, the liable recycler must include the following information in that annual return, and record that information pursuant to regulations 18D(1)(b)(i) and 18D(5).

1. All liable recyclers must record and report the following data in tonnes or cubic metres against the approved waste material categories:
 - a) total quantity of waste received
 - b) total quantity of waste recycled
 - c) total quantity of residual waste and non-residual waste recovered as energy
 - d) total quantity processing losses sent for disposal
 - e) total quantity of stockpiled waste, reported separately for both processed waste and unprocessed waste
 - f) total processing capacity.
2. All liable recyclers must record and report the following details against the approved waste material categories reported under (1):
 - a) Sources of waste:
 - sector source of waste (municipal, commercial and industrial, construction and demolition)
 - geographic source of waste (Perth Metropolitan Region, Peel region, other regions, or imported).

³ The term 'approve' is defined in regulation 3 of the *Waste Avoidance and Resource Recovery Regulations 2008* to mean approved by the CEO in writing. [Waste Data Online](#) is the approved form for making and lodging annual returns.

b) Destinations of recovered waste:

- used on site
- final product
- further processing in WA
- further processing interstate
- export.

c) Productive use of final products:

- reuse
- uncontaminated fill
- civil construction
- organics used for soil improvement, land rehabilitation and mulch
- manufacture of new products similar to those from which the recovered material was derived
- manufacture of other products
- fuel.

3. Liable recyclers must calculate or estimate the information by virtue of regulation 18D(1)(b)(ii) of the *Waste Avoidance and Resource Recovery Regulations 2008* required in item 1 and 2 using the Approved procedure for estimation/calculation of annual return information methods by recycling and reprocessing facilities required under the *Waste Avoidance and Resource Recovery Regulations 2008* at Attachment 1 of this notice, which forms part of this notice.
4. Liable recyclers must make and submit their return in the approved⁴ form.
5. Liable recyclers must, by virtue of regulation 18D(1)(b)(i) of the *Waste Avoidance and Resource Recovery Regulations 2008*, keep any records relevant to the calculation, estimation or verification of the information reported in its annual return in a legible written form, or so as to be readily convertible into such a form, for a period of not less than five years from the day on which the record was made.

⁴ The term 'approved' is defined in regulation 3 of the *Waste Avoidance and Resource Recovery Regulations 2008* to mean approved by the CEO in writing. [Waste Data Online](#) is the approved form for making and lodging annual returns.

CURRENT REPORTING AND LIABILITY

The liable recycler must make an annual return in the approved⁵ form and lodge it with the CEO on or before 1 October each year. The annual return must contain the information required under this notice for the most recently completed financial year relating to reportable waste⁶ or recycling of reportable waste.

This CEO notice replaces all previous CEO notices issued to liable recyclers under regulation 18D(1) of the *Waste Avoidance and Resource Recovery Regulations 2008*.

There are a number of offences provided for under regulation 18E of the *Waste Avoidance and Resource Recovery Regulations 2008* for breaches by a liable recycler under regulations 18B, 18C and 18D, carrying a fine of \$10,000.

Alistair Jones
Chief Executive Officer
Department of Water and Environmental Regulation

25 June 2025

⁵ See footnote 4 above.

⁶ Regulation 18A of the *Waste Avoidance and Resource Recovery Regulations 2008* defines **reportable waste** to mean waste that is solid matter.

Attachment 1

Approved procedure for estimation/calculation of annual return information methods by recycling and reprocessing facilities required under the *Waste Avoidance and Resource Recovery Regulations 2008*

Approved procedure of the CEO of the department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007* as required under regulation 18D of the *Waste Avoidance and Resource Recovery Regulations 2008*

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1. Objective

To establish the procedure of the chief executive officer of the department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007*⁷ (CEO) for estimating and calculating information to be reported in an annual return under regulations 18C and 18D(1) of the *Waste Avoidance and Resource Recovery Regulations 2008* (WARR Regulations).

This document is intended for liable persons, as defined by regulation 18B(3) of the WARR Regulations, who are the occupiers of premises, whether or not the person holds a licence in respect of the premises —

- a) if reportable waste is treated, processed or sorted at the premises for the purposes of reprocessing, recycling or energy recovery
- b) if, as a result of that treatment, processing or sorting, at least 1,000 tonnes of reprocessed, recycled or recovered material is produced in a financial year at the premises that —
 - i) needs no further processing and is ready for use as a production input or a final product; or
 - ii) is to be exported from the State.

For the purpose of this document, these persons will be hereafter referred to as liable recyclers.

2. Background

The WARR Regulations require liable persons to make and lodge annual returns with the CEO on or before 1 October in each year. The annual returns must contain information for the most recently completed financial year relating to reportable waste⁸ or the recycling of reportable waste, as required by the notice under regulation 18D(1) (notice).

The WARR Regulations require annual returns to be prepared using procedures for the purposes of calculation or estimation methods described and approved by the CEO in the notice.

3. CEO-approved methods

This document provides the procedure to be followed by liable recyclers for the purposes of the calculation or estimation methods that liable recyclers are required to use to prepare their annual returns under regulation 18C of the WARR Regulations.

This document forms a part of the notice approved by the CEO.

⁷ The 'department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007*' is currently the Department of Water and Environmental Regulation.

⁸ Regulation 18A of the *Waste Avoidance and Resource Recovery Regulations 2008* defines **reportable waste** to mean waste that is solid matter.

4. Reportable waste scope

All reportable wastes that are received at a liable recycler's facility are in scope.

Wastes that are recovered at the point of generation are out of scope, including:

- organic wastes from primary production that are not received at a liable recycler's facility
- pre-consumer waste that is recovered on-site as part of a manufacturing process.

5. Reportable waste material categories

Liable recyclers must categorise and report waste information using the approved reportable waste material categories provided in Appendix A.

6. Processing capacity

Liable recyclers must report on the maximum quantity of material that can be processed at the premises per year without substantial upgrade or amended approvals by the main waste category types provided in Appendix A.

7. Measuring waste

Note for liable recyclers that are also licensed landfills.

Liable recyclers that are also landfills subject to the waste levy, must measure waste in a manner that is consistent with the requirements under the *Waste Avoidance and Resource Recovery Levy Regulations 2008*. The methods below apply to all other liable recyclers.

7.1 Waste received, recovered and residuals

7.1.1 Weighing

The preferred method for estimating the quantity of reportable waste received at and leaving the facility is for the reportable waste to be weighed at the point of entry and departure on a calibrated weighbridge, load cell or scales at the facility.

All weights are to be reported as wet weights.

7.1.2 Volume estimation

Where weighing reportable waste is not possible, the volume of each load entering and leaving the facility must be assessed. Approved default values for vehicle volumes are provided in Appendix B. Volume of each load is assessed as the volume of the vehicle or container multiplied by the percentage fullness of the vehicle or container.

7.1.3 Point of measurement

The preferred point of measuring recovery is recovered products 'out the gate' plus any additions to stockpiles of recovered products.

The exception is processors of organic waste, who must report the total wet weight of organic waste that is received and partially or fully composted in the reporting period.

8. Stockpiles

8.1 Mass balance

The weight or volume of a stockpile is determined by adding net movement of materials to the original weight or volume of the stockpile. This method is only suitable for non-degradable material, such as masonry materials, dry recyclables, etc.

8.2 Volumetric survey

A volumetric survey may be used to estimate the volume of a stockpile. Volumetric surveys are not required to be conducted by a qualified surveyor but should be conducted as close to the end of the reporting period as possible.

8.3 Physical measurement

Physical measurement can be used where materials are stored in baled cubes or regular shaped windrows and will be estimated from length, height and width of the stored waste and/or waste products.

Where only a small amount of material is stored on-site (<200 m³), the stockpile volume may also be estimated from measurements of the circumference and height of a stockpile.

8.4 Converting volumes to tonnes

If all reportable waste is volume assessed at a facility, then the liable recycler may use cubic metres to prepare the annual return.

Alternatively:

- liable recyclers may convert measured volumes to tonnes using site-specific material density factors. Recyclers must submit the density factors used in the preparation of the return to the department at waste.data@dwer.wa.gov.au at the time of lodging the return.
- Default density factors provided under Appendix B Default factors may also be used to prepare the return.

9. Source of waste

The source of each load received at the facility should be recorded by waste stream and geographic source using the classifications under 2(a) in the CEO notice.

Where possible, the waste stream in which the waste was generated should be recorded, otherwise it is recorded as the waste stream in which the waste was collected.

C&D recycling facilities may assume all waste delivered to their premises for processing is from the C&D waste stream.

If during a reporting period, source data were not recorded for each load received at the facility, then the liable recycler must keep a record of how the waste streams and geographic sources were estimated for the purposes of preparing the annual return and provide this information to the department on request.

9.1 Waste aggregated at a transfer station

If waste from multiple sources is aggregated at a transfer station prior to delivery to the liable recycler's facility, then waste sources must be determined from the transfer station records.

10. Destinations and productive uses of outgoings

Liable recyclers are required to record and report the destinations of materials or products leaving their facilities using the classifications listed under 2(b) of the CEO notice.

The productive use/s of any 'final products' leaving a facility must also be recorded and reported in the annual return.

If during a reporting period, data about the destinations and productive uses of recovered products were not recorded for each load leaving the facility, then the liable recycler must keep a record of how the destinations and productive uses were estimated for the purposes of preparing the annual return and provide this information to the department on request.

11. Additional guidance for organics recyclers

Any organic wastes processed at a liable recycler's facility are within scope of this CEO notice. This includes:

- sawdust and bark
- feedlot manures
- primary production wastes (forestry and agricultural)
- fisheries wastes.

12. Additional guidance for charitable recyclers

The sorting and sale of unwanted items, such as the activities of charity operated 'op shops', are not required to be reported under regulation 18C of the WARR Regulations.

However, charitable recyclers may be liable recyclers, as defined by regulation 18B(3) of the WARR Regulations and required to report on other aspects of their operations, such as the sorting of waste textiles for export.

12.1 Reuse

Charitable recyclers that are liable recyclers can voluntarily report the textiles and household items sorted and recovered through their activities in the annual return. These items should be reported as quantity received and the quantity of any waste sent to landfill should be reported as 'reprocessing losses'. No recovery should be reported but the destination of 'final product' and a productive use of 'reuse' should be assigned against the reported material categories.

13. Additional guidance for waste recovered as energy

All waste recovered as energy must be reported as a wet weight.

Waste-to-energy facilities must separately report the amount of residual waste and non-residual waste recovered as energy.

The definitions used in the waste strategy of residual and non-residual wastes apply.

Ash produced at waste-to-energy facilities must be reported as a wet weight and according to its fate (recycling or disposal).

13.1 Other recyclers that process waste that is subsequently sent for recovery as energy

These recyclers may assume that all the waste that they report as recovered as energy is residual waste.

13.2 Anaerobic digestion facilities

These facilities may assume all waste received is residual waste. For data reporting purposes, material entering an anaerobic digestion process can be allocated to both energy recovery and recycling where the digestate is used as an organic soil conditioner.

14. Default values

Liable recyclers must use facility-specific density factors and vehicle volumes where this information is available. Liable recyclers must submit any facility-specific density factors used in the preparation of the return to the department at waste.data@dwer.wa.gov.au at the time of lodging the return.

Approved default values for estimating volume for various vehicle types and bulk densities for various reportable waste material categories are provided in Appendix B. These default values can be used where facility-specific data are not available.

15. Alternative methods

Liable recyclers may propose alternative methods for estimating the amount of reportable waste received, recovered and residuals if these are more accurate than the methods set out above.

Any alternative methods proposed must be accurate, repeatable and consistent.

Liable recyclers must submit alternative methods, with relevant substantiating information, to the department at waste.data@dwer.wa.gov.au for consideration and approval prior to use in the annual return.

16. Definitions

Term	Definition
Commercial and Industrial waste (C&I)	Solid waste generated by the business sector, State and Australian Government entities, schools and tertiary institutions.
Construction and demolition waste (C&D)	Waste produced by demolition and building activities, including road and rail construction and maintenance, and excavation of land associated with construction activities.
Material density factors	Tonnes per cubic metre. A property of a material. Can be used to estimate the weight of a particular material from a measure of its volume.
DWER (the department)	Department of Water and Environmental Regulation

Term	Definition
Energy recovery	<p>Processes through which wastes are collected, sorted and processed to recover energy in usable form, for example process heat, steam or in electricity generation.</p> <p>For data reporting purposes, the quantity of waste allocated to the fate 'energy recovery' excludes residuals from energy from waste facilities that are recycled or sent to landfill or otherwise disposed of.</p> <p>Energy recovery is reported as the wet weight of the waste received and converted to energy.</p>
Final product	A waste destination where recovered waste requires no further processing before its end use, including use as a production input.
Further processing	A waste destination for recovered waste that has been sent to another facility in WA for further reprocessing prior to becoming a final product or production input or leaving WA.
Municipal solid waste (MSW)	Solid waste generated from domestic (residential) premises and local government activities.
Peel region	The Peel region is the area defined by the Peel Region Scheme (May 2013).
Perth Metropolitan Region	The Perth region, or Perth Metropolitan Region, is the area defined by the Metropolitan Region Scheme (June 2014).
Productive uses	Use of recovered materials for a beneficial purpose, including energy recovery.
Recycling	<p>Activities that culminate in the reprocessing of wastes into products or secondary materials that are returned to productive use (excluding for energy). May include collection, sorting and/or reprocessing. For data reporting purposes, recycling:</p> <ul style="list-style-type: none"> • includes all materials received by a reprocessing facility that are processed to the point of being suitable for manufacturing or return to productive use, whether immediately used or stored for later sale or use • includes weight losses to the atmosphere during the processing of wastes (for example, moisture, carbon dioxide from organics degradation) • excludes residuals that are sent to landfill or otherwise disposed of • excludes materials received at a recycling facility but not yet processed • is reported as wet weight.
Recovered materials	Waste materials separated, sorted or processed for the purposes of waste reuse, recycling or energy recovery.
Recovery	An abbreviation of 'resource recovery'. The process of reprocessing of wastes into products or secondary

Term	Definition
	materials that are returned to productive use, including for energy. May include collection, sorting, reprocessing and/or energy recovery.
Reportable waste	Means waste that is solid matter under regulation 18A of the Waste Avoidance and Resource Recovery Regulations 2008.
Reprocessing	Transformation of recovered materials to make raw materials for use in making new products or direct use. May include cleaning, fractionation, crushing, shredding, dissolution, composting or other transformative processes.
Residual waste	As defined in the waste strategy.
Reuse	Reallocation of products or materials to a new owner or purpose without reprocessing but potentially with some repair (for example, repair of pallets for resale, tyre retreading).
Stockpiling	Temporary storage of waste or waste products for future sale, resource recovery or disposal.
Treatment	The removal, reduction or pasteurization of hazardous characteristics to enable the waste to be sent to its final fate or further treatment.
Used on site	A waste destination where recovered waste is put to beneficial use at the liable person's facility such as recovered C&D materials used to construct roads at the facility.
Wet weight	The weight of waste including naturally occurring moisture at a given measurement point.

Appendices

Appendix A Material categories and types

Category (Tier 1)	Subcategory (Tier 2)	Subcategory description
Paper and cardboard	White office paper	High-quality white office paper
	Old Newsprint (ONP)	Newspapers
	Magazines	Magazines and booklets
	Liquid paperboard	Milk and juice cartons made from liquid paperboard
	Paper – mixed	Combination of the above categories
	Cardboard	Corrugated and flat cardboard. Excludes non-recyclable wasted and coated cardboard
	Mixed paper/cardboard	Paper and cardboard collected together
Glass	Glass packaging – mixed	Glass jars and bottles
	Glass – construction	Glass windows and tiles
	Glass – other	Wine glasses, etc.
Plastic	PET (1)	Polyethylene terephthalate
	HDPE (2)	High-density polyethylene
	PVC (3)	Poly-vinyl chloride
	PE-LD/LLD (4)	Low-density polyethylene
	PP (5)	Polypropylene
	PS (6)	Polystyrene (hard form)
	PS-E (6)	Polystyrene (expanded form / foam)
	ABS/SAN/ASA (7)	Acrylonitrile butadiene styrene / styrene acrylonitrile / acrylonitrile styrene acrylate
	PUR/PIR (7)	Polyurethanes and polyisocyanurates
	Polyamides (PA) (nylons)	Nylon
	Bioplastics	
	Mixed plastic packaging	Recyclable plastic packaging (PET, HDPE, PVC, etc.)
	Hard plastic (not packaging)	Mixed hard plastics
	Other aggregated polymer types	
	Unknown polymer	
Metals	Metals – ferrous steel – packaging	Cans

Category (Tier 1)	Subcategory (Tier 2)	Subcategory description
	Metals – ferrous steel – steel – non-packaging	Bars, pipes, etc.
	Metals – non-ferrous – aluminium – packaging	Cans and foil
	Metals – non-ferrous – aluminium – non- packaging	Bars, tubes, etc.
	Metals – non-ferrous – other metals	Copper, zinc, etc.
Organics	Food waste	Kitchen scraps, unsold food products (unpacked)
	Vegetation	Leaves, branches, logs, grass clippings, flowers
	Food and garden organics (FOGO)	Combined food and garden waste collected in kerbside collections (FOGO)
	Forestry waste	Barks and sawdust (from forestry activities)
	Agricultural waste (excluding manure)	Includes animal bedding, animal mortalities, paunch and straw
	Manures	Raw, untreated animal manure
	Biosolids	Solid organic outputs from processing sewage
	Sawdust	
	Urban wood and timber (also C&D waste)	Wood/timber from commercial and industrial activities or construction and demolition activities
	Fats and grease	Waste fats, grease, greasetrap sludge, biodegradable sludges, waste cooking oil, etc.
	Other organic	
Rubber	Tyres	All rubber tyres. Does not include metal rim or hubcaps
	Other rubber, including conveyor belts	All other rubber
C&D waste	Sand/soil	Uncontaminated sand or soil
	Clean fill	Raw, excavated natural material such as clay, gravel, sand, soil or rock fines sourced from land that has not been used for any potentially contaminating land uses
	Rubble/aggregate	Stones, etc. also includes clean, processed C&D recycled
	Bricks	Whole or broken bricks

Category (Tier 1)	Subcategory (Tier 2)	Subcategory description
	Concrete	Concrete or cement
	Asphalt	Waste bitumen or asphalt
	Plasterboard and cement sheeting	Plasterboard and cement sheeting
	Masonry material	Mixed concrete, brick, tiles etc.
	Mixed C&D waste	Mixed construction and demolition waste
	Mixed inert waste	Other C&D waste meeting the Type 1 inert waste definition in the Landfill Waste Classification and Waste Definitions 1996 (as amended 2018)
Textiles	Mixed textiles	Cloth, rags, clothes
	Leather	Items mainly leather
	Foam rubber	Includes polyurethane or latex
	Carpets	Carpets
	Mattresses	Mattresses
Mixed putrescible waste	Mixed domestic kerbside residuals (no organics service)	Waste from mixed residual kerbside bin with no separate FOGO or GO collection
	Mixed domestic kerbside residuals (organics service)	Waste from mixed residual kerbside bin with no separate FOGO or GO collection
	Mixed putrescible waste – C&I	Includes putrescible waste from retail, service and manufacturing industries
	Residuals from biodigestion	
	Mixed putrescible – other	Putrescible waste as defined in Landfill Waste Classification and Waste Definitions 1996 (as amended 2018)
Mixed dry recyclables	Co-mingled recycling	Containers, paper and cardboard collected from households and commercial premises
	Co-mingled recyclables (glass separate)	Containers, paper and cardboard with glass separated
	Co-mingled recyclables (paper and cardboard separate)	Containers, including glass with paper and cardboard separated
	Mixed industrial recyclables	Dry recyclable material collected from commercial and industrial premises. Includes mixed cardboard / plastic film collections. Includes mixed timber/steel/cardboard collections

Category (Tier 1)	Subcategory (Tier 2)	Subcategory description
E-waste	Screens, information technology and telecommunications	Regulated e-waste-category
	Lighting and lamps	Regulated e-waste-category
	Large appliances	Regulated e-waste-category
	Batteries	Regulated e-waste-category
	Temperature exchange equipment	Regulated e-waste-category
	Medical devices	Regulated e-waste-category
	Solar panels	
Bulky wastes	Mattresses	Mixed steel, foam and cloth mattresses
	Furniture	Mixed material furniture, e.g. lounge chairs
Hazardous	Household chemicals	Household chemicals recovered through Household Hazardous Waste collections
	Waste oil	Waste oil collected through waste oil collections and through Household Hazardous Waste collections, such as lubricating oil, mechanical oil
	Asbestos	Asbestos containing material. Includes asbestos fencing, pipes, insulation
	Clinical waste	Includes all medical and veterinary waste
Contaminated soil	Contaminated soil	Soil from a contaminated site, as defined by the <i>Contaminated Sites Act 2003</i>
Other	Fly ash	Ash produced by burning of coal
	Residuals from waste to energy facilities	Ash produced by burning of waste to produce energy
	Residuals from metals recovery facilities	Shredder floc
	Residuals from materials recovery facilities (MRFs)	Residual fines which consist of mostly broken glass, some shredded paper and some small plastic pieces (e.g. lids)
	Disaster waste	Where not readily reportable by material type
	Other	Waste not otherwise specified (please specify)

Appendix B Default factors

Note: Liable recyclers must use facility-specific values where this information is available. The default values provided can be used where facility-specific data are not available.

Table 1 Default vehicle volumes

Vehicle type	Assumed volume (m ³)
Small vehicle (car, utility, van, trailer)	1
Open truck – small, 2 axles	3
Open truck – large 2 axles	6
Open truck – 3 axles	10
Open truck – 4 axles	12
Open truck – 5 axles	18
Open truck – 6 axles	20
Open truck – 8 axles	20
Open truck – 9 axles	32
Open truck – 11 axles	40
Compactor truck – volume unknown	10

Source: DWER (2018) Approved manner for estimating the volume or weight of waste received at and disposed of to landfills *Waste Avoidance and Resource Recovery Levy Regulations 2008*

Table 2 Default bulk densities

Waste material	Default bulk density (t/m ³)
Paper	0.2
Cardboard	0.1
Plastics	0.14
Plastic containers (loose)	0.01
Metals – ferrous – mixed	0.35
Metals – non-ferrous	0.14
Glass (whole)	0.347
Glass – (ex-MRF)	1
Concrete	1.5
Bricks	1.2
Soil, sand, clean fill	1.3
Plaster board/cement sheeting	0.5
Organics – garden organics	0.15
Organics – food organics	0.5
Organics – timber/wood	0.19
Organics – timber/wood (packaging and pallets)	0.156
Organics – other organics	0.3
Rubber/tyres	0.3

Textiles	0.15
Hazardous – asbestos	0.31
Hazardous – other	0.2
Mixed materials	
Mixed building waste in skip bins	0.7
Co-mingled recyclables (uncompacted)	0.063
Mixed domestic kerbside residuals	0.14
Mixed domestic hard waste	0.11
Residuals from materials recovery facilities	0.31
Residuals from metals recycling facilities (shredder floc)	0.2
Disaster waste	0.72
Other / mixed – putrescible	0.3
Other /mixed – inert	1.3

Table 3 Weight (kg) per item of product wastes

Type	Weight (kg)
Mattress	35
Tyre	8
E-waste	
Dishwashers	43.3
Kitchen (e.g. large furnaces, ovens, cooking equipment)	47.66
Washing machines (incl. combined dryers)	72.54
Dryers (wash dryers, centrifuges)	45.98
Lamps (e.g. pocket, Christmas, excl. LED and incandescent)	0.09
Compact fluorescent lamps (incl. retrofit and non-retrofit)	0.08
Straight tube fluorescent lamps	0.11
Special lamps (e.g. professional mercury, high- and low-pressure sodium)	0.08
LED Lamps (incl. retrofit LED lamps and household LED luminaires)	0.08
Household luminaires (incl. household incandescent fittings)	0.45
Professional luminaires (offices, public space, industry)	2.67
Professional medical (e.g. hospital, dentist, diagnostics)	67.04
Game consoles	0.48
Small IT (e.g. routers, mice, keyboards, external drives and accessories)	0.4
Desktop PCs (excl. monitors, accessories)	8.77
Laptops (incl. tablets)	1.26
Printers (e.g. scanners, multifunctionals, faxes)	10.32
Telecom (e.g. cordless phones, answering machines)	0.45
Mobile phones (incl. smartphones, pagers)	0.09
Professional IT (e.g. servers, routers, data storage, copiers)	40
Cathode ray tube monitors	22

Flat display panel monitors (LCD, LED)	5.5
Cathode ray tube TVs	33.2
Flat display panel TVs (LCD, LED, Plasma)	10.2
Central heating (household installed)	30.85
Professional heating and ventilation (excl. cooling equipment)	124.61
Household heating and ventilation (e.g. hoods, ventilators, space heaters)	12.14
Fridges (incl. combi-fridges)	40.79
Freezers	44.09
Air conditioners (household installed and portable)	26.7
Other cooling (e.g. dehumidifiers, heat pump dryers)	41.7
Professional cooling (e.g. large air conditioners, cooling displays)	110.1
Cooled dispensers (e.g. for vending, cold drinks)	92.22
Container Deposit Scheme	
Glass beverage container (150 ml to 3 L)	0.220
Polyethylene terephthalate (PET) beverage container (150 ml to 3 L)	0.027
Aluminium beverage container (150 ml to 3 L)	0.014
High-density polyethylene (HDPE) beverage container (150 ml to 3 L)	0.030
Liquid paperboard (LPB) beverage container (150 ml to 1 L)	0.020

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