



Notice of information required for an annual return of liable recyclers

Waste Avoidance and Resource Recovery Regulations 2008
(Regulation 18D)

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 in respect of that 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 final products
 - 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 against the approved waste material categories:
 - a) total quantity of waste received in tonnes or cubic metres
 - b) total quantity of waste recycled in tonnes or cubic metres
 - c) total quantity of residual waste and non-residual waste recovered as energy in tonnes or cubic metres
 - d) total quantity processing losses sent for disposal in tonnes or cubic metres
 - e) total quantity of stockpiled waste, reported separately for both processed waste and unprocessed waste in tonnes or cubic metres
 - f) total processing capacity in tonnes or cubic metres.
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
- 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

<DATE>

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
 - 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 Section 13. 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 |

| | |
|-----------------------------|---|
| 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 materials that are returned to productive use, including for energy. May include collection, sorting, reprocessing and/or energy recovery. |

| | |
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| 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

| | | |
|---------------------|------------------------------------|--|
| | | |
| 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 |

| | | |
|-----------|---|---|
| | 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 (unpackaged) |
| | 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 |
| | 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 |
| 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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