



# Waste not, want not: valuing waste as a resource

Submission to the Department of Water and Environmental Regulation

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## About CME

The Chamber of Minerals and Energy of Western Australia (CME) is the peak resources sector representative body in Western Australia. CME is funded by member companies responsible for over 90 per cent of the State's mineral and energy production and workforce employment.

In 2017-18, the value of Western Australia's mineral and petroleum industry was \$115 billion. Iron ore is currently the State's most valuable commodity at \$61 billion. Petroleum products (including crude oil, condensate, liquefied natural gas, liquefied petroleum gas and natural gas) followed at \$26 billion, with gold third at \$11 billion. Both commodities saw an increase in value of 39 and 5 per cent respectively from the previous financial year.

Contributing to a third of the State's total industry Gross Value Added,<sup>1</sup> the resources sector is a major contributor to both the State and Australian economy. The value of royalties received from the sector in 2018 19 totalled \$6.2 billion, accounting for 20 per cent of State Government revenue.<sup>2 3</sup>

## Summary of recommendations

### Valuing waste as a resource

To value waste as a resource and promote a circular economy in Western Australia, CME makes the following recommendations:

- Products which are fit-for-purpose and do not create a risk to human health or the environment ('waste-derived materials') need to be valued by the State and provided for under its legislation.
- The new legislative framework for waste-derived materials needs to provide certainty regarding when a waste-derived material will not trigger and/or be exempt from waste licensing requirements and levy obligations.
- DWER should consider the significant impediments to the re-use and recycling of appropriate, fit-for-purpose materials, resulting from the determinations of Justice Beech in the Eclipse Case and the current definition of waste in existing State legislation.

### Legislative framework options

When considering the legislative framework options for waste-derived materials in the State, CME makes the following recommendations:

- WA develops a legislative framework which incorporates a number of aspects adopted in different legislative approaches used in other jurisdictions in Australia and/or overseas.
- CME supports a legislative framework which will:
  - Incentivise good environmental outcomes;
  - Encourage the use of fit-for-purpose, waste-derived materials and a circular economy;
  - Provide for a risk-based assessment and approval process for bespoke use of waste-derived materials;
  - Will not heavily restrict industry-to-industry transfers of secondary materials; and
  - Incentivise investment in and the trialling of waste-derived materials.

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<sup>1</sup> Duncan, A., Kiely, D. and Salazar, S., *Quarterly Economic Commentary: March 2019*, Bankwest Curtin Economics Centre, Curtin University, April 2019, p. 4.

<sup>2</sup> Excludes monetary contributions via North West Shelf grants, State taxes and fund levies.

<sup>3</sup> Government of Western Australia, *Budget Paper No. 3: 2019-20 Economic and Fiscal Outlook*, Western Australian State Budget 2019-20, Department of Treasury, May 2019, p. 68.

## Defining waste

When defining waste CME recommends the following be taken into consideration:

- Existing legislation in WA, which already defines waste and/or regulates materials which may pose a risk to the environment or human health. The definition of waste should ideally be consistent across WA legislation and regulations.
- The definition of waste must be explicit enough as not to capture unintended materials, including clean fill, uncontaminated fill, or waste already covered under existing legislation.
- The definition must be flexible enough to allow for a waste to become a non-waste in the future.
- Waste definitions and legislative approaches from wider geographies should be assessed for potential use in WA.

## Materials to be excluded from the definition of waste or exempt from waste licensing and levy obligations

- It is essential a number of materials in the resources sector are excluded from the definition of waste or exempt from waste licensing and levy obligations under the new legislation.
- CME recommends materials produced and managed under the following legislation, be excluded from the definition of waste or exempt from waste licensing and levy obligations under the new waste-derived materials legislation:
  - *Mining Act 1978*
  - *Petroleum and Geothermal Energy Resources Act 1967*; and
  - State Agreement Acts.
- CME does not consider it necessary, nor appropriate, for waste materials in the resources sector to be further regulated by the new proposed legislative framework.
- CME recommends industry-to-industry transfer of by-product materials be considered in the development of the waste-derived materials legislation and mechanisms adopted to incentivise industrial symbiosis in Western Australia.

## Supporting investment, innovation and research

- CME recommends the waste-derived legislative framework enables and incentivises investment in, and the trialling of, materials for their suitability to become waste-derived materials. This in turn will drive new innovation and a wider, more global response to waste.

## Terminology

- CME recommends using the term 'recovered material' or 'secondary material' to more clearly distinguish products from being a waste and assist to in the secondary material marketing.

## Context

The Department of Water and Environmental Regulation's (DWER) is seeking public comment to inform the development of a legislative framework for waste-derived materials, through its '*Issues paper, Waste not, want not: valuing waste as a resource*'<sup>4</sup>(Issues paper).

The Issues paper relates to the Waste Avoidance and Resource Recovery Strategy 2030's objective to 'encourage the use of waste-derived materials, including by developing product specifications for them, to build confidence in recycled products, increase demand for them and develop relevant markets while protecting the environment.'<sup>5</sup>

The following submission is structured to cover current impediments of existing waste legislation in Western Australia, legislative framework options to consider for waste-derived materials, defining waste and the need for investment, innovation and research to support a wider, more global response to waste.

## Valuing waste as a resource

To support the development of a circular economy, there is a need for waste generated in the State to be recognised as an untapped economic opportunity, with potential beneficial environmental outcomes. To start valuing waste as a resource however, the way in which waste is defined and regulated first needs to change. **CME recommends products which are fit-for-purpose and do not create a risk to human health or the environment ('waste-derived materials')<sup>6</sup> need to be valued by the State and provided for under its legislation.**

## The issue of waste in WA

The current regulatory regime governing waste in Western Australia does not provide certainty of when waste-derived materials will not trigger licencing and levy obligations. Industry has reported this uncertainty is inhibiting the uptake of market development for waste-derived materials, is driving a preference for the use of virgin raw materials (a significant negative environmental outcome) and is leading to valuable resources potentially being sent to landfill.

**CME recommends the new legislative framework for waste-derived materials needs to provide certainty regarding when a waste-derived material will not trigger and/or be exempt from waste licensing requirements and levy obligations.**

Much of the uncertainty regarding waste resulted from the interpretations made by Justice Beech in the case *Eclipse Resources Pty Ltd v The Minister for Environment* (Eclipse case).

Further issue arise in the creation of a circular economy due to the broad definition of the term 'waste' in Section 3(1) of the *Environmental Protection Act 1986*<sup>7</sup> (EP Act) and the *Waste Avoidance and Resource Recovery Act 2007*<sup>8</sup> (WARR Act) which defines waste to include matter:

1. whether liquid, solid, gaseous or radioactive and whether useful or useless, which is discharged into the environment; or
2. prescribed to be waste.

In considering a legislative framework for waste-derived materials, CME recommends **DWER should consider the significant impediments to the re-use and recycling of appropriate, fit-for-purpose materials, resulting from the determinations of Justice Beech in the Eclipse Case and the current definition of waste in existing State legislation.**

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<sup>4</sup> Department of Water and Environmental regulation, '*Issues paper, Waste not, want not: valuing waste as a resource*'. Consultation to inform development of a legislative framework for waste derived materials, June 2019.

<sup>5</sup> Department of Water and Environmental regulation, '*Issues paper, Waste not, want not: valuing waste as a resource*'. Consultation to inform development of a legislative framework for waste derived materials, June 2019, p.1.

<sup>6</sup> Department of Water and Environmental regulation, '*Issues paper, Waste not, want not: valuing waste as a resource*'. Consultation to inform development of a legislative framework for waste derived materials, June 2019, p.1.

<sup>7</sup> Government of Western Australia, Department of Justice, Parliamentary Council's Office - *Environmental Protection Act 1986*  
[https://www.legislation.wa.gov.au/legislation/statutes.nsf/main\\_mrtitle\\_304\\_homepage.html](https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_304_homepage.html)

<sup>8</sup> Government of Western Australia, Department of Justice, Parliamentary Council's Office - *Waste Avoidance and Resource Recovery Act 2007*  
[https://www.legislation.wa.gov.au/legislation/statutes.nsf/main\\_mrtitle\\_2758\\_homepage.html](https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_2758_homepage.html)

## Legislative framework options

When deciding upon an appropriate legislative mechanism, the issues paper considers the legislative frameworks in New South Wales, South Australia and Queensland. Each of the legislative frameworks presented in the issues paper have their merits and issues. CME therefore recommends **WA develops a legislative framework which incorporates a number of aspects adopted in different legislative approaches used in other jurisdictions in Australia and/or overseas.**

The following sets out some options for DWER's consideration:

### Option 1

As per the European Union (EU) Waste Framework Directive<sup>9</sup>, rather than providing a framework for waste-derived materials, the legislative framework could provide for waste, waste-derived materials, and non-waste by-products (which materials from the resources sector would likely fall into).

The technical scrutiny and approval process surrounding a risk-based approach to the acceptability of materials for use/re-use could still be consistently applied, however potential licensing duplication and unintended consequences relating to classification of by-products as waste could be obviated for a significant volume of non-waste by-products.

### Option 2

A legislative framework for waste-derived materials which includes a definition of waste that provides clarity and certainty for a range of common waste-derived products (as in the Queensland model), in addition to the flexibility to reuse, recycle and repurpose low-risk waste and industry-to-industry by-product, without subjecting producers and users to burdensome regulation (as in the South Australian model).

A dual pathway would also encourage novel waste-derived products to be developed (i.e. trialled) and investment in new innovative products incentivised by removing uncertainty regarding the final status of the product. The definition of waste from the current DWER factsheet, "Assessing whether a material is waste", could be a useful guide for developing the two pathways for waste-derived materials.

Overall CME supports a legislative framework which will:

- **Incentivise good environmental outcomes;**
- **Encourage the use of fit-for-purpose, waste-derived materials and a circular economy;**
- **Provide for a risk-based assessment and approval process for bespoke use of waste-derived materials;**
- **Will not restrict industry-to-industry transfers of secondary materials; and**
- **Incentivise investment in and the trialling of waste-derived materials.**

Other aspects also worthy of consideration include:

- Where a waste-derived material is intended for sale to the public, there should be a link to standard product approval and/or quality control processes. In addition, there needs to be a distinct transfer of liability for the waste-derived material at point-of-sale (or similar);
- Adoption of a clear and fit-for-purpose process with regulators, including agreed timeframes for the assessment period for transition of a waste to a secondary material and a single approval that covers both users and producers;
- That the regulator's primary responsibility is administering the framework, including specifying or codifying particular secondary materials, but is not required to keep a register of end users;
- In turn, the onus should be on suppliers of materials to keep records which can be periodically reviewed by the regulator as per framework requirement.

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<sup>9</sup>European Commission - Directive 2008/98/EC on waste (Waste Framework Directive)  
<https://ec.europa.eu/environment/waste/framework/>

## Defining waste

When considering a legislative framework to be adopted there is a need to define waste. The regulatory frameworks presented in the issues paper offer two options:

1. Waste is broadly defined and includes waste-derived materials, with various mechanisms adopted to either:
  - a) exempt waste-derived materials from particular legal requirements; or
  - b) excludes waste-derived materials which meet certain criteria.(NSW & SA)
2. Waste is defined and excludes “an end of waste resource” which is explicitly defined by whom and how a material is managed.  
(Queensland)

When defining waste CME recommends **DWER take the following into consideration:**

- **Existing legislation in WA which already defines waste and/or regulates materials, which may pose a risk to the environment or human health. The definition of waste should ideally be consistent across WA legislation and regulations** e.g. the *Environmental Protection (Controlled Waste) Regulations 2004*<sup>10</sup> refer to the definition of waste in the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure*<sup>11</sup>, which is different to the EP Act.
- **The definition must be explicit enough as not to capture unintended materials, including fill, uncontaminated fill or waste already covered under existing legislation.**
- **The definition must be flexible enough to allow for a waste to become a non-waste in the future.**

CME further recommends **consideration of waste definitions and legislative approaches from wider geographies be assessed for use in WA.**

The UK/EU defines waste as ‘any substance or object which the holder discards or intends to discard or is required to discard’ (Waste Framework Directive 2008/98/EC).

Furthermore, with respect to by-products, the EU Waste Framework Directive provides that “a substance or object, resulting from a production process, the primary aim of which is not the production of that item, may be regarded as a non-waste by-product”. The classification of a non-waste by-product is then subject to specified conditions including:

- further use of the substance or object is not just a possibility but a certainty;
- the substance has been produced as an integral part of a production process;
- its further use is lawful in the sense that: -
  - it fulfils all relevant product, environmental and health requirements for the specific use to be made of it; and
  - it will not have an adverse impact on the environment or human health.<sup>12</sup>

Under this framework, rather than providing a framework for waste-derived materials, the legislative framework could provide for waste, waste-derived materials, and non-waste by-products.

The United States Environmental Protection Agency (US EPA) includes the following as waste:

- **Abandoned:** The term abandoned means thrown away. A material is abandoned if it is disposed of, burned, incinerated, or sham recycled.

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<sup>10</sup> *Environmental Protection (Controlled Waste) Regulations 2004*, [https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc\\_26787.pdf/\\$FILE/Environmental%20Protection%20\(Controlled%20Waste\)%20Regulations%202004%20-%20%5B01-a0-02%5D.pdf?OpenElement](https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc_26787.pdf/$FILE/Environmental%20Protection%20(Controlled%20Waste)%20Regulations%202004%20-%20%5B01-a0-02%5D.pdf?OpenElement)

<sup>11</sup> National Environment Protection (Movement of Controlled Waste between States and Territories) Measure, <http://www.nepc.gov.au/nepms/movement-controlled-waste>

<sup>12</sup> Directive 2008/98/EC of the European Parliament and of The Council, of 19 November 2008, on waste and repealing certain Directives - <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098>



- **Inherently Waste-Like:** Some materials pose such a threat to human health and the environment that they are always considered to be waste; these materials are considered to be inherently waste-like.<sup>13</sup>

Under the US EPA regime, material is recycled if it is:

- Used or reused – a material which is either employed as an ingredient in an industrial process to make a product or if it is employed as an effective substitute for a commercial product.
- Reclaimed – a material which is processed to recover a usable product or if it is regenerated; or
- Used in certain ways - used in or on the land in a manner constituting disposal, burned for energy recovery, or accumulated speculatively.<sup>14</sup>

The Basel Convention on the 'Control of Transboundary Movements of Hazardous Wastes and their Disposal' covers a wide range of wastes defined as 'hazardous wastes based on their origin and/or composition and their characteristics, as well as two types of wastes defined as 'other wastes' - household waste and incinerator ash.<sup>15</sup>

The Basel Convention Glossary of Terms<sup>16</sup> also discusses the possible scenarios when a waste ceases to be a waste, including when:

- It has been prepared for reuse;
- It has undergone a recycling operation and that operation is completed; or
- It has otherwise gained end-of-waste status as a result of a recovery operation.

CME members with international operations have also considered the definition of waste and potential alternative view to promote better use of natural resources and promote a circular economy. For example, whether a material is considered to be a waste can be based upon a material's societal value - i.e. a future-state definition of waste considers waste as 'anything with no remaining societal value'. This allows for anything currently viewed as waste to become a by-product based on the value that society can attribute to it. This also allows for local factors, as well as incentivising industry to manage out waste if value can be realised.

CME recommends **DWER look to adopt an existing, tested definition of waste if possible, rather than attempt to develop a new definition of waste.**

## **Materials to be excluded from the definition of waste or exempt from waste licensing and levy obligations**

CME recommends **it is essential a number of materials in the resources sector are excluded from the definition of waste or exempt from waste licensing and levy obligations under the new legislation.**

CME therefore recommends **materials produced and managed under the following legislation, be excluded from the definition of waste or exempt from waste licensing and levy obligations, under the new waste-derived materials legislation:**

- ***Mining Act 1978;***<sup>17</sup>
- ***Petroleum and Geothermal Energy Resources Act 1967;***<sup>18</sup> and
- **State Agreement Acts.**

By adopting this approach, the following materials, specific to the resources sector, will appropriately be excluded from the definition of waste, or exempt from licensing and levy obligations:

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<sup>13</sup> United States Environment Protection Agency - Criteria for the Definition of Solid Waste and Solid and Hazardous Waste Exclusions - <https://www.epa.gov/hw/criteria-definition-solid-waste-and-solid-and-hazardous-waste-exclusions>

<sup>14</sup> United States Environment Protection Agency - Reduce, Reuse, Recycle - <https://www.epa.gov/recycle>

<sup>15</sup> UNEP Basel Convention, Controlling transboundary movements of hazardous wastes and their disposal - <http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx>

<sup>16</sup> UNEP Basel Convention – Glossary of Terms <file:///C:/Users/a.lemoine/Downloads/UNEP-CHW-PUB-GUID-GlossaryTerms.English.pdf>

<sup>17</sup> Government of Western Australia, Department of Justice, Parliamentary Council's Office - Mining Act 1978, [https://www.legislation.wa.gov.au/legislation/statutes.nsf/main\\_mrtitle\\_604\\_homepage.html](https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_604_homepage.html)

<sup>18</sup> Government of Western Australia, Department of Justice, Parliamentary Council's Office - Petroleum and Geothermal Energy Resources Act 1967, [https://www.legislation.wa.gov.au/legislation/statutes.nsf/main\\_mrtitle\\_704\\_homepage.html](https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_704_homepage.html)



- Any material which is subject to a royalty payment and therefore inherently still has a value/use to society;
- “Waste rock” - Rock which is mined and does not have current metal concentrations of economic value to the miner; and
- “Tailings” - ground rock and process effluents that are generated in a mine processing plant and disposed of within tailings storage facilities as approved.

By way of example, the following would be appropriately excluded from the definition of waste: waste rock crushed for road base and concrete aggregate; and tailings used for paste fill in underground mining situations.

It should be noted that none of the above Acts exempt activities from being regulated under the provisions of the EP Act and other legislation already in place to protect the environment and human health. Further, **CME does not consider it necessary, nor appropriate, for waste materials in the resources sector to be further regulated by the new proposed legislative framework.**

### **By-products**

CME considers the current definition of waste is too broad, and could be unnecessarily obstructive to the beneficial use of by-products. The current approaches of other States, as presented in the issue paper, do not however provide any lesser obstruction. It is noted that for the jurisdictions presented, there are no mining related materials approved other than for coal, which may suggest the approaches are not conducive to the re-use of resource industry by-products, or such by-products are not being considered as wastes despite the broad definition of “waste”.

A State framework for managing waste, where by-products produced by industry defined as waste (as determined from the perspective of the person who is the source of material) and are subject to a levy, will undermine the adoption of industrial symbiosis (industrial ecology) and the development of a circular economy in WA.

The paper “*Industrial Symbiosis in the Kwinana Industrial Area (Western Australia)*”<sup>19</sup> discusses the benefits which can be derived from industry-to-industry transfer of by-product materials. This can only occur if such transfers are not over regulated and/or financially dis-incentivised.

The following is a figure from this paper, showing historical by-product industrial symbiosis in the Kwinana Industrial Area.

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<sup>19</sup> Harris, S. Dr, *Industrial Symbiosis in the Kwinana Industrial Area (Western Australia)*, Centre of Excellence in Cleaner Production, Curtin University of Technology, *Measurement + Control* Vol 40/8 October 2007, <https://journals.sagepub.com/doi/pdf/10.1177/002029400704000802>

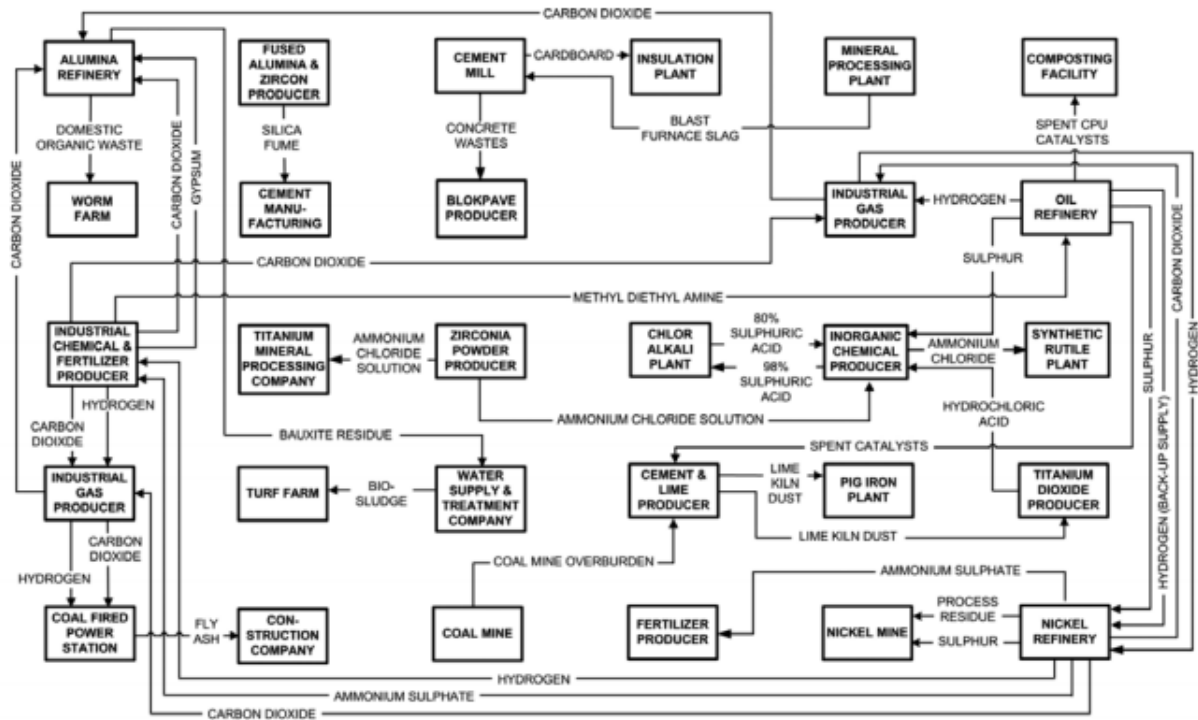


Figure 3: Existing by-product IS in the Kwinana Industrial Area. (van Beers, Corder et al. 2007)

CME recommends industry-to-industry transfer of by-product materials be considered in the development of the waste-derived materials legislation to prevent unnecessary regulation and mechanisms adopted to incentivise industrial symbiosis in Western Australia.

## Supporting investment, innovation and research

CME recommends the waste-derived legislative framework specifically enables and incentivises investment in, and the trialling of, materials for their suitability to become waste-derived materials. This in turn will drive new innovation and a wider, global response to waste.

For example, a tailings material may be used as a soil ameliorant for acidic soils. With testing, there could be potential for re-use whilst improving plant productivity on WA soil. Any legislation should allow for testing and trialling of waste in different capacities to explore alternative options. Barriers to trials must be sufficiently low to encourage innovation and novel reuse / repurposing. Allowing trial permits or periods could revolutionise how companies handle large volume mineral wastes. Minimising such wastes through reuse / repurposing has multiple benefits including reducing footprints, reducing liability, reducing demand for new raw materials and reducing potential environmental impacts.

## Terminology

New South Wales and South Australia use the term “waste derived material”, while Queensland has adopted the term “end of waste resource”. CME recommends using the term “recovered material” or “secondary material” to more clearly distinguish products from being a waste and to assist to in the secondary material marketing.

## Conclusion

CME welcomes the opportunity to provide comment on DWER's Issues paper on its proposed new legislative framework for waste-derived materials and looks forward to ongoing engagement with the Department on the progress of this important legislation.

If you have any further queries regarding the above matters, please contact Bronwyn Bell.

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Document reference	K:\Environment\Projects & Issues\Waste\End of Waste\2019\Waste not, want not\190904-ENV-Valuing Waste as a Resource v.0.8.docx		