

Review of the Draft Industry Interim Standard for Televisions and Computers (DIIS)

Risk and Cost Implications

Department of Sustainability, Environment, Water, Population and Communities

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KMH ENVIRONMENTAL

Review of the Draft Industry Interim Standard for Televisions and Computers (DIIS)

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Prepared for**:**

Department of Sustainability, Environment, Water, Population and Communities

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Executive Summary

The Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) engaged KMH Environmental to undertake a consultancy to independently review the Draft Interim Industry Standard for the Collection, Transport and Recycling of End of Life Televisions and Computers (DIIS) to describe risks and costs associated with its implementation. The DIIS has been developed by the industry peak bodies, the Australian Information Industry Association (AIIA) and Product Stewardship Australia Limited (PSA.)

Risk

A significant amount of work has already been conducted by DSEWPaC and its stakeholders in the area of risk management. To avoid duplication and ensure this risk assessment reflected the scope of engagement i.e. OH&S and environmental risks, KMH used the structure of the DIIS as a guide to developing the framework for risk identification. The following key areas were chosen for risk identification:

- General Requirements
- Requirements for Collection Locations
- Transport Requirements for Recyclers
- Reprocessing and Reuse Applications
- Labour

Following the identification of risks in each of the above areas, KMH reviewed any existing controls already in place, documented the associated controls and rated them in terms of their effectiveness, using the Risk Control Ratings scale provided in the DSEWPaC Risk Management Guidelines i.e.;

Ranking	Guidance
Weak	Control of risk low e.g. significant improvement required on newly identified issues
Incomplete	Actions have already been established to address control weaknesses, but not fully implemented OR exposures not controllable but actively monitored
Adequate	Some improvements to controls desirable
Strong	Controls are believed to be operating and highly effective
Over-controlled	Room for efficiency improvements/ cost reduction opportunities

The risk assessment was conducted in accordance with the DSEWPaC Risk Management Guidelines utilising the Risk Control Ratings scale, Likelihood and Consequence rankings and the overall risk analysis matrix.

More than 30 risks were identified from the DIIS itself along with a review of stakeholder comments. The nature of the risks arising are summarised into the following categories:

- Lack of regulatory controls and guidelines for the implementation of the DIIS
- Potential for pollution
- Potential for occupational health and safety risks
- Lack of operational systems developed by operators e.g.;
    - Staff training,
    - Development and implementation of work methods
- Lack of facilities to meet the demand
- Improper sorting techniques

The risk analysis ranked 7 risks as “High”:

1. Lack of auditing system/guidelines
2. Operator fails to develop and implement documented work methods
3. Employees are exposed to mercury contamination
4. Risk of fire
5. Failure to minimise carbon emissions associated with recycling practices.
6. Failure of the DIIS to address the 9 new POPs identified under the Stockholm Convention on Persistent Organic Pollutants (POPs).
7. Export to non OECD countries without the appropriate permit under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.

The remaining “Medium” ranking risks with incomplete or weak controls were:

- End of life (EOL) goods received at an unsuitable premises/location that is operated by an unauthorised recycler.
- Inappropriate separation techniques are applied to recover resources.
- Failure to ensure staff are provided with necessary personal protective equipment.
- Failure to appropriately separate materials for recycling.
- Improper mechanical or manual dismantling results in the release of hazardous substances to which employees are exposed.
- Inappropriate secondary application of recovered resources eg: use of leaded glass from plasma screens as a substitute for sand.
- Lack of minimum recycling rate or requirement for highest use practices, in the DIIS discourages recyclers from recovering materials leading to unnecessary disposal to landfill.
- Failure of the DIIS to require identification of hazardous substances prior to disposal.
- Brominated Fire Retardant contaminated plastics are sent to landfill.
- Failure of the DIIS to accurately define the role of recyclers results in uncontrolled practices.
- Failure to separate substances of concern for integrity and traceability.

A regulatory risk review was also conducted to identify regulatory risks associated with legal compliance, specifically the *Hazardous Waste Act 1989*, Basel Convention and the Stockholm Convention. The risks identified in this review relate to the:

- Regulation of export of hazardous waste
- Regulation of sale of hazardous waste
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on POPs

The majority of the regulatory risks have been rated as ”high” primarily due to the consequence rating should the risk occur. All existing controls were ranked as “adequate.”

Based on the risk assessment and regulatory risk review, a risk treatment plan has been developed for each risk that ranked as “high”. From this, suggested risk mitigation measures include:

- The development and implementation of an audit regime to regulate industry operators and timetable for implementation.
- The development and rollout of a familiarisation/training program for operators to provide:
    - Detailed information on the specific reporting requirements of the Standard.
    - An explanation of the introductory comments of Appendix 1 to ensure the contents are included into a training session for delivery to operators as outlined in the risk treatment plans above.
    - the requirements of the *Hazardous Waste Act 1989 a*nd how they apply to DIIS associated activities
    - Guidance on the environmentally sound removal of electronic equipment as outlined in Appendix 1
    - Information on the safe removal of components prior to processing
- The approved arrangement should ensure that DSEWPaC is consulted in relation to all training material and provided the opportunity to participate.

The DIIS has also been reviewed against key international standards that are used for similar programs around the world, in particular Canada, Europe and the USA.

Five gaps in the DIIS were identified:

- Does not require written policies for hygiene, eating and drinking to reduce worker exposure to contaminants
- Does not require establishment of health and safety committee
- No specification on amount that can be stored at any given time
- No data security required
- No specific requirements for CRTs and flat panel displays

Recommendations - Risk

The risk assessment process recommends a number of opportunities for improvement prior to consideration by the Regulator of the DIIS. Our recommendations are to:

1. *Develop an education/training/familiarisation plan to accompany DIIS;*
2. *Implement the risk treatment plan;*
3. *Adopt additional control measures for medium risks*;
4. *Formalise Appendix 1 as prescriptive requirements;*
5. *Develop and communicate an auditing regime to ensure operational best practice throughout the industry*;
6. *Add written policies for hygiene, eating and drinking; and*
7. *Consider International obligations (DSEWPaC)*

Cost implications of the DIIS

The costs have been estimated only as they would be borne by scheme participants in implementing the requirements of the DIIS. These can broadly be described as:

For collection locations and transporters:

- System establishment and maintenance to DIIS requirements
- Periodic random audits (collection locations only)
- Establishment of data collection and record keeping systems associated with reporting (collection locations only)
- Reporting to PSO (collection locations only)

For primary recyclers:

- EMS establishment and maintenance
- ISO 14001 certification of EMS
- Requirements of DIIS likely to be additional to ISO 14001 such as environmental monitoring (air quality and noise), establishment of data collection and record keeping systems associated with reporting, reporting to PSO and downstream processor management

Estimates for annualised costs averaged over three years and first year costs, for each program participant, are summarised below.

Program Participant	Estimated annual cost ($) per entity	Estimated first year cost ($) per entity
Collection location	$5,200 - $6,200	$9,500-$12,500
Transporter company	$0	$0
Recycler	$13,000	$22,000

The DIIS imposes low to negligible cost to all three participants, where they are an existing business carrying out these activities. This is because so much of the DIIS's requirements are already in place as 'business as usual' activities for these companies.

While costs to new entrants are much higher (as shown in Table 7), subtracting out those costs of DIIS compliance that can be demonstrated to be 'business as usual' for entry into this market, regardless of the presence of the DIIS, reduces new entrant costs to be identical to those for existing service providers (see table above). These figures are the true costs of DIIS implementation for all providers, i.e. those that can be attributed to DIIS compliance over and above any existing industry norms or legal requirements.

Accounting for these as inherent costs of doing business in this sector, which also happen to be required by the DIIS, the DIIS does not pose an unreasonable burden, or provide a financial barrier, to new entrants.

The requirement for recyclers of certification to a standard such as ISO 14001 is appropriate to maximise the chance of mitigating these risks, which comes at a cost. Because such systems are pre-existing for most current players the estimated additional cost of $52,000 - $88,000 per annum can more accurately be seen as only $13,000 per annum for the majority.

Put another way, even at $88,000 per year, the impact to recyclers is 1% of the potential share of contracts likely to be available to them from the program by the end of year 3.

Recommendations - Cost

8. *No changes to the DIIS* are recommended directly as a result of the cost burdens estimated in Section 4 of this report.

9. *ISO 14001 Requirement timing* - ISO 14001 should be set as a requirement from day one since it is the most effective option to prevent the occurrence of incidents related to environmental or occupational health and safety. However, there may be circumstances where there is a legitimate advantage to contracting a non-ISO 14001-certified recycler, such as to minimise transport costs/ emissions by using a local provider in a remote location, or where the environmental outcome may clearly be more beneficial through using a non-certified supplier over a certified one. It is recommended to allow for this situation, on the assumption that it will be rare, and that such a decision be subject to:

    - a risk assessment;
    - the supplier already having a functioning (if not certified) system in place; and
    - auditing of the supplier be carried out before contracts are established, to satisfy the PSO that it can comply with the DIIS.

Recommendations - Other

A number of other recommendations arising from stakeholder comments and our general review of the document are suggested. These are:

10. *Clarification amendments to the document:-* Improve the purpose and accuracy of the DIIS by making the following editorial changes:

    - **Section 1. "Scope**": *"This Interim Industry Standard applies to the drop-off, collection, transport and recycling~~, and disposal~~ of products covered under the National Television and Computer Product Stewardship Scheme ie End of Life (EOL) Televisions and Computers*."

    - **Section 2. "Application"**: Include a paragraph clarifying situations where the DIIS must be followed and where it strongly suggested as guidance in non-PSO contracts, ie:

      "The Interim Industry Standard applies to contracts between the PSO and service providers it contracts with. While not specifically subject to this standard, arrangements between direct service providers and their sub contractors (i.e. downstream processors) should be guided by this standard."

    - **Section 2. "Application, Note 1"**: *"However it is expected that an auditing regime will need to be in place under the National Television and Computer Product Stewardship Program to monitor compliance of collection locations and transporters."* While noted that "periodic random audits" would more likely be weighted towards collection locations, leaving transporters subject to no checking mechanism at all is not acceptable.

    - **Section 4.1. "Risk Management, Note 2"**: *"Information on Exposure Standards is available from Safe Work Australia's Hazardous Substances Information System (available at www.safeworkaustralia.gov.au)*

    - **Section 4.6. "Reporting"**:

      - *"Collection Locations, Transporters and Recyclers shall provide reports to the Product Stewardship Organisation as follows:"*
      - Insert heading before section 4.6 a as follows: *"For Collection Locations, Transporters and Recyclers"*
      - Insert heading before section 4.6 b as follows: *"For Collection Locations and Recyclers"*

    - **Section 4.7. "Records Management"**: *"~~The~~ Recyclers, Collection Locations and Transporters shall maintain and make available for audit documentation evidencing compliance with this Interim Standard."*

    - **Section 6.2. "Export Transport Requirements"**: Is the reference to "Road and Rail Transport Acts" appropriate to export requirements? If so it should be made more specific.

11. *Promotion of the Waste Hierarchy:-* Include mechanisms to ensure legitimate reuse opportunities are not wasted, such as stating that items should be collected/ handled/ transported so they are not damaged before they are assessed for reuse possibilities, or including the amount of equipment reused as part of recycler reporting requirements. (It is noted that the DIIS explicitly excludes reuse from the standard.)
12. *Prison labour:-* Anecdotally prison labour is not routinely used in the Australian recycling industry. Delete references to it as it appears to have been more of an issue in overseas schemes.
13. *Signage guidelines:-* While not required as part of the DIIS, it is recommended that signage guidelines for collection locations are developed as a linked document referenced by the DIIS, to promote safe drop-off practices and to ensure consistency of message and branding for the program.

1. Introduction

1.1. Scope of work

The Draft Interim Industry Standard for the Collection, Transport and Recycling of End of Life Televisions and Computers (DIIS) is intended for the guidance of organisations seeking to participate as collection locations, transporters, recyclers and processors for the industry-managed product stewardship arrangements under the National Television and Computer Product Stewardship Scheme. It will be used as the required minimum practice standard in the auditing and, where applicable, certification of participating organisations.[1]

The DIIS will act as an interim measure while an official Australian and New Zealand Standard is being prepared through the Standards Australia/Standards New Zealand consensus process. The DIIS has been prepared by the industry peak bodies, Australian Information Industry Association (AIIA) and the Product Stewardship Australia Limited (PSA) and has been the subject of consultation with a broad group of stakeholders with a view to creating an interim standard that is broadly acceptable to most stakeholders.[2]

The Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) engaged KMH Environmental to undertake a consultancy to independently review the DIIS to describe associated risks and costs.

Through a desktop review and a face to face inception meeting, this has involved:

1) Undertaking a robust risk analysis and assessment of the DIIS and stakeholder submissions, including identifying and rating risks as well as developing a risk treatment plan, in accordance with the international risk management standard *ISO 31000:2009 - Risk Management Principles and Guidelines*. The analysis identifies occupational, health and safety risks and environmental risks associated with the DIIS proposed methods for collection, handling, storage, transport and treatment of end-of-life televisions, computers and computer peripherals. This review includes consideration of whether:

> a) required occupational health and safety and environmental performance are appropriately incorporated, including as defined by Commonwealth, state and territory laws, including the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (Cth), and as identified in relevant international standards; and
>
> b) Australia's international obligations are met, including requirements under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the Stockholm Convention on Persistent Organic Pollutants.

2) In addition, the risk assessment considers whether the DIIS would provide for adequate auditing and validation requirements in any contracts between the industry-led Television and Computer Scheme and service providers, and whether these arrangements align with international best practice.

The objectives against which the risk assessment was conducted include:

- *to ensure EOL Television and Computers are managed safely and in an environmentally sound manner at the end of their useful life*[3] *, and;*
- " *to establish and implement a cost effective, environmentally sound national Program for the collection and recycling of EOL computer and television equipment, consistent with community and industry objectives, and complying with the Australian Government's National Product Stewardship Framework Legislation and any subordinate regulatory instruments."*[4]

More specific objectives proposed for the Product Stewardship Organisation in this discussion paper include:

- Reduce the impact on the environment from end of life televisions and computers.

[1] Draft Interim Industry Standard: Collection, Transport & Recycling of End of Life Televisions and Computers v6 PSA- AIIA November 2010
[2] Draft Interim Industry Standard: Collection, Transport & Recycling of End of Life Televisions and Computers v6 PSA- AIIA November 2010
[3] Draft Interim Industry Standard: Collection, Transport & Recycling of End of Life Televisions and Computers v6 PSA- AIIA November 2010
4 The National Televisions and Computers Product Stewardship Program Discussion Paper

- Reduce television and computer waste going to landfill.
- Increase recovery and recycling of televisions and computers.
- Increase target audience awareness of television and computer recycling.
- Achieve manufacturer and importer compliance with television and computer recovery and recycling regulations. [5]

3) Identifying costs associated with implementing the DIIS, including estimating cost burdens. Costs include:

a) the cost to the television and computer industry or a third party to certify recyclers or other parties involved in the collection, handling, storage, transport and treatment of the items; and

b) costs to recyclers or other parties to comply with the DIIS.

4) Consideration of key stakeholder feedback on the DIIS and provision of recommendation/s on how the DIIS might reasonably be altered to address stakeholder concerns (with respect to risk and cost); and

5) Providing recommendations on how the DIIS may be amended to meet the above objectives.

5 National Televisions And Computers Product Stewardship Program (Including PRO Plans) Discussion Paper For Planning Purposes Draft 5 December 2010

1.2. Scheme participants

The scheme participant organisations, or parties impacted by the DIIS, are represented in Figure 1 below. Note that the Product Stewardship Organisation (PSO), previously known as the Producer Responsibility Organisation (PRO), may establish operational contracts with collection locations, transporters and/ or recyclers. Contracts between the primary recycler and subsequent downstream processors will not formally involve the PSO.

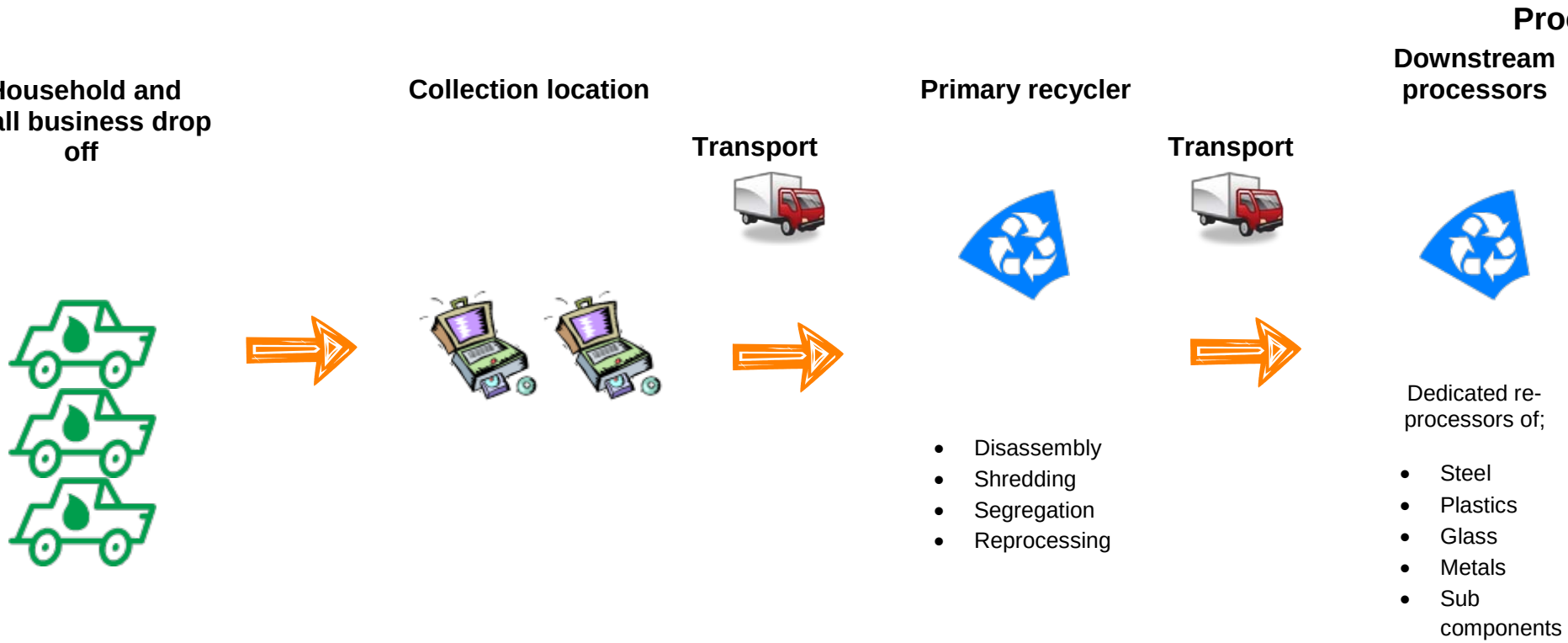

Figure 1: Parties involved in the scheme

Note: While collection locations will be designed to store TV and computer waste, it is possible that some storage may also occur at collection locations, transporter depots, primary recyclers and downstream processors.

1.3. Stakeholder consultation

Stakeholder views were sought on the DIIS, using a structured questioning approach, designed to target the following key areas relating to the DIIS:

- Best Practice
- Occupational health and safety
- Provision of an adequate auditing regime
- Appropriateness for an Australian context
- International obligations
- Costs for implementation

Stakeholders consulted were sourced from the membership of the Stakeholder Reference Group (SRG) for the National Television and Computer Product Stewardship Scheme, and can be broadly categorised as representing:

- Jurisdictional governments;
- Local government;
- Industry Associations;
- Non-government Organisations (NGO's); and
- The recycling industry.

These comments are provided in Appendix A.

2. Methodology

The following section provides a detailed explanation of the methodology undertaken to complete the required analysis and assessment of the risks and costs associated with the adoption and implementation of the DIIS.

2.1. Risk assessment of the DIIS, from an OH&S and environmental perspective

In performing the risk assessment and developing the risk treatment plan, KMH has adopted the process outlined in the international risk management standard *ISO 31000:2009 - Risk Management Principles and Guidelines* and summarised in the following diagram. The DSEWPaC Risk Management Guidelines were also adhered to in conducting the risk assessment.

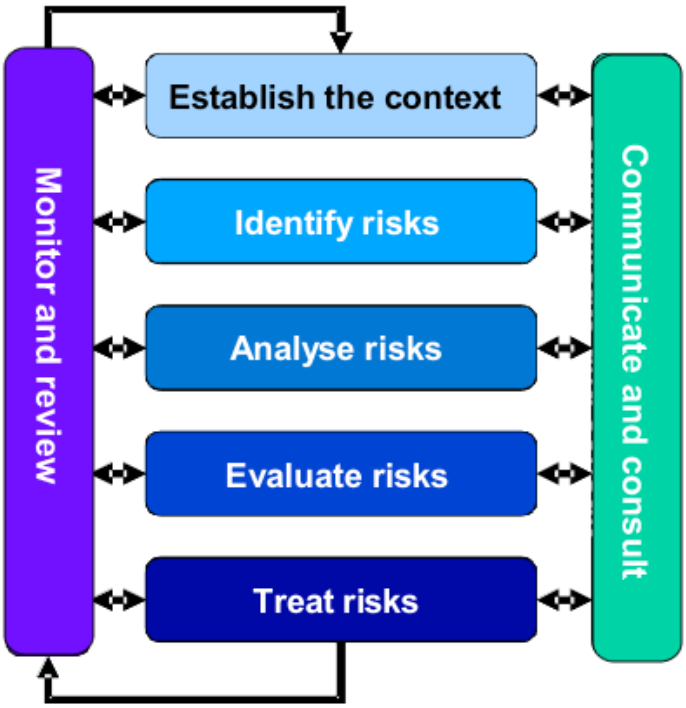

Figure 2: Summary of the Risk Management Process

2.1.1. Context Statement

The context statement has been prepared following a desktop review of a number of key documents provided by DSEWPaC, including:

- The DIIS
- Stakeholder feedback on the DIIS provided by DSEWPaC (see Appendix A)
- DSEWPaC - Risk Management Guidelines
- National TV and Computer Product Stewardship Scheme Implementation Working Group - Stakeholder Risk Analysis Workshop Outcomes
- AIIA E-Sig/PSA National Televisions And Computers Product Stewardship Program (Including PRO Plans) Discussion Paper For Planning Purposes Draft 5 December 2010
- WEEELABEX normative requirements on Collection
- WEEELABEX normative requirements on Logistics
- WEEELABEX normative requirements on Treatment

In addition KMH referred to the scope of works for our engagement which focused the risk assessment to OH&S and environmental risks.

2.1.2. Risk Identification and Analysis

KMH used the structure of the DIIS as a guide to developing the framework for risk identification. The following key areas were chosen for risk identification:

- ***General Requirements*** – Risks identified in this category relate to operational requirements of collection locations, transporters and recyclers and include the sub headings of Section 4 of the DIIS namely;
  - Risk Management
  - Legal Compliance
  - Emergency Response
  - Receiving Handling and Storage
  - Data Security
  - Reporting
  - Records Management
  - Disposal to Landfill
- ***Requirements for Collection Locations –*** This includes risks associated with storage of end of life (EOL) televisions and computers
- ***Transport Requirements*** – including waste tracking and traceability of waste to its ultimate point of disposal
- ***Requirements for Recyclers*** – processing and handling related risks
- ***Reprocessing and Reuse Applications –*** Secondary usage risks
- ***Labour***

Following the identification of risks in each of the above areas and focussing on OH&S and environment, KMH reviewed any existing controls already in place, documented the associated controls and rated them in terms of their effectiveness, using the Risk Control Ratings scale provided in the DSEWPaC Risk Management Guidelines i.e.;

Ranking	Guidance
Weak	Control of risk low e.g. significant improvement required on newly identified issues
Incomplete	Actions have already been established to address control weaknesses, but not fully implemented OR exposures not controllable but actively monitored
Adequate	Some improvements to controls desirable
Strong	Controls are believed to be operating and highly effective
Over-controlled	Room for efficiency improvements/ cost reduction opportunities

Whilst the DIIS is still in draft, and therefore the risk controls have not yet been implemented, KMH ranked the controls according to how effective they would be in managing the risk upon adoption and implementation of the DIIS. All controls would otherwise, have to be rated as “incomplete” based on the above definitions.

Risks were then assessed in terms of likelihood and consequence again using the ratings scales provided in the DSEWPaC Risk Management Guidelines. These are also included in Appendix B. The risk assessment process produced risk rankings as per DSEWPaC’s Guidelines of Severe, High, Medium and Low as illustrated in the following matrix:

LIKELIHOOD	CONSEQUENCE				
	Insignificant	Minor	Moderate	Major	Critical
Almost certain	Low	Medium	High	Severe	Severe
Likely	Low	Medium	Medium	High	Severe
Possible	Low	Low	Medium	High	Severe
Unlikely	Low	Low	Low	Medium	High
Rare	Low	Low	Low	Medium	High

2.1.3. Risk Treatment Plan

For risks ranked Severe or High on the above matrix, KMH has provided recommendations and guidance on how best to treat and manage these risks to reduce their severity. Whilst medium and low risks are still important and need to be continually managed, time and budget of this engagement limited us in developing treatment plans for the less severe risks.

2.2. Assessment of the DIIS against international best practice

In keeping with the scope of the risk assessment (i.e. focussing on OH&S and environmental risks), KMH assessed the DIIS against international best practice by reviewing the way in which other countries identified and managed these risks. The following international standards and guidelines were reviewed in order to assess the completeness of the DIIS:

- WEEELABEX normative requirements on Collection
- WEEELABEX normative requirements on Logistics
- WEEELABEX normative requirements on Treatment
- UNEP - *Sustainable Innovation and Technology Transfer Industrial Sector Studies* Recycling From E-Waste to Resources
- Environmental and Human Health Risks Associated with the End-of-Life Treatment of Electrical and Electronic Equipment - Institute for Global Environmental Strategies (IGES), Japan
- Electronics Recycling Standard 2009 – Electronics Product Stewardship, Canada
- The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment July 2009 – e-Stewards,

2.3. Cost implications of the DIIS

Costs have been estimated only as they would be borne by scheme participants in implementing the requirements of the DIIS. Other costs associated with implementation of the scheme have been estimated in the Decision RIS.[6] These are discussed in section 3 and can broadly be described as:

For collection locations and transporters:

- System establishment and maintenance to DIIS requirements
- Periodic random audits (collection locations only)
- Establishment of data collection and record keeping systems associated with reporting (collection locations only)
- Reporting to PSO (collection locations only)

For primary recyclers:

- EMS establishment and maintenance
- ISO 14001 certification of EMS
- Requirements of DIIS likely to be additional to ISO 14001 such as environmental monitoring (air quality and noise), establishment of data collection and record keeping systems associated with reporting, reporting to PSO and downstream processor management

[6] Environment Protection and Heritage Council Decision Regulatory Impact Statement: Televisions and Computers, October 2009 – PWC/ Hyder Consulting

2.3.1. Costs methodology

The approach taken to estimate costs is broad and high level, and is designed to identify the effect that implementation of the standard is likely to have on both the existing industry and new players. It is not a detailed economic analysis.

A range of assumptions as described in section 2.3.2 have been used in estimating costs. The methodology applied the following steps:

- Identify specific requirements from the DIIS that apply to each of the parties involved in implementing the standard – collection locations, transporters and primary recyclers.
- Ignore those requirements that may be deemed to be standard industry practice or part of general business management, hence not unique to this standard.
- For each party, list the activities that are required to be undertaken to comply with the DIIS.
- Assuming a range of operations in terms of size and complexity, apportion costs for each activity according to KMH's and others' experience in systems and procedures development, auditing, reporting and certification (where applicable) for similar types of companies/ industries.
- Assume a proportional relationship between ISO 14001 establishment and certification costs and non-ISO 14001 set up and assurance costs as outlined in the DIIS for collection locations and transporters. Estimate these costs for collection locations and transporters as a proportion of costs for ISO 14001 establishment and certification (for recyclers) (see section 2.3.2 assumptions 6-8).
- Combine both establishment and running costs as an annual estimate.
- Assess estimated costs against industry and broader stakeholder views collected during consultation, plus any available information from standards applying to similar programs either nationally or overseas.
- Review estimated costs through targeted industry discussions.

2.3.2. Assumptions

A number of assumptions have been used in allocation of costs that are expected to apply to parties to the program, as a direct result of implementing the DIIS. These assumptions are included in Appendix C.

3. Risk Analysis

3.1. Context Statement

The risk assessment identifies those risks specifically relating to OH&S and environment that are likely to arise from a poorly drafted standard, including whether there are any regulatory risks associated with the:

- application of the DIIS resulting in breaches of occupational health and safety and environmental laws and international standards, including as defined by Commonwealth, state and territory laws, including the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (Cth), and relevant international standards; and

- application of the DIIS resulting in breaches to Australia's international obligations, including requirements under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the Stockholm Convention on Persistent Organic Pollutants (POPs).

The risk assessment was conducted in accordance with the DSEWPaC Risk Management Guidelines utilising the Risk Control Ratings scale, Likelihood and Consequence rankings and the overall risk analysis matrix.

The successful implementation of the DIIS will significantly contribute to the achievement of the National Waste Policy Regulation Impact Statement (RIS) objective of "*to support business and consumers to appropriately manage end-of-life products, materials and packaging*."[7]

3.2. Risk Identification and Analysis

The risk identification and analysis process identified specific risks in relation to the DIIS and its application. Risks were categorised according to the section of the Standard to which they relate. A risk description identified the risk and in accordance with AS/NZS ISO 31000:2009, characterised the risk by reference to potential events and consequences. Potential causes and impacts of risks occurring were described and where an existing control was already in place details were provided. The strength of these controls was rated prior to assessing the risk. The risks were then ranked in terms of likelihood and consequence considering the strength of the existing controls i.e. the adequacy of the controls may reduce the risk severity.

More than 30 risks were identified from the DIIS itself along with a review of stakeholder comments. The nature of the risks arising are summarised into the following categories:

- Lack of regulatory controls and guidelines for the implementation of the DIIS
- Potential for pollution
- Potential for occupational health and safety risks
- Lack of operational systems developed by operators eg;
    - Staff training,
    - Development and implementation of work methods
- Lack of facilities to meet the demand
- Improper sorting techniques

The risk analysis ranked 7 risks as "High" and therefore requiring the development of a risk treatment plan. The high ranking risks were:

1. *Lack of auditing system/guidelines from Government to ensure adherence to industry standards.*
2. *Operator fails to develop and implement documented work methods describing safe and environmentally sound practices.*
3. *Employees are exposed to mercury contamination due to failure to remove lamps and bulbs prior to shredding or mechanical processing.*
4. *Risk of fire resulting from failure to remove batteries from motherboards prior to shredding.*
5. *Failure to minimise carbon emissions associated with recycling practices.*
6. *Failure of the DIIS to address the 9 new POPs identified under the Stockholm Convention.*

[7] National Waste Policy Regulatory Impact Statement October 2009 Report to the Department of the Environment, Water, Heritage and the Arts - The Allen Consulting Group Pty Ltd

7. *Export to non OECD countries without the appropriate permit under the Hazardous Waste Act.*

For each of these risks a risk treatment plan has been prepared and is included in Appendix F. The risk treatment plan provides;

- Suggestions for additional controls/further treatment
- Timeframe for Implementation
- Responsibility

The remaining risks were rated as “Medium” however a number of these risks were also identified as having incomplete controls. The “Medium” ranking risks with incomplete or weak controls were:

- EOL goods received at an unsuitable premises/location that is operated by an unauthorised recycler.
- Inappropriate separation techniques are applied to recover resources.
- Failure to ensure staff are provided with necessary personal protective equipment.
- Failure to appropriately separate materials for recycling.
- Improper mechanical or manual dismantling results in the release of hazardous substances to which employees are exposed.
- Inappropriate secondary application of recovered resources eg: use of leaded glass from plasma screens as a substitute for sand.
- Lack of minimum recycling rate or requirement for highest use practices, in the DIIS discourages recyclers from recovering materials leading to unnecessary disposal to landfill.
- Failure of the DIIS to require identification of hazardous substances prior to disposal.
- Brominated Fire Retardant contaminated plastics are sent to landfill.
- Failure of the DIIS to accurately define the role of recyclers results in uncontrolled practices.
- Failure to separate substances of concern for integrity and traceability.

It is recommended that additional treatment measures also be developed internally for these risks.

3.3. Regulatory Risk Review

In addition to the risk assessment conducted on the DIIS and stakeholder comments, a regulatory risk review was conducted to identify regulatory risks associated with legal compliance, specifically the Hazardous Waste Act 1989, Basel Convention and the Stockholm Convention on POPs. It is noted as a part of this risk review that the Basel Convention is an international agreement to which the Australian Government is a party to, rather than any companies involved in export of waste directly. The *Hazardous Waste Act 1989* is the Australian Government’s policy response to implement Australia’s obligations under the Basel Convention. Consequently it is the *Hazardous Waste Act 1989* that applies directly to waste exporting companies.

The risks identified in this review relate to the:

- Regulation of export of hazardous waste
- Regulation of sale of hazardous waste
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Stockholm Convention on POPs

The complete regulatory risk review is provided in Table 9, Appendix E.

The majority of these risks have been rated as ”high” primarily due to the consequence rating should the risk occur. All existing controls were ranked as “adequate.”

3.4. Risk Treatment Plan for “High” Risks from the Overall Risk Review

Based on the risk level identified in the risk assessment above, a risk treatment plan has been developed for each risk ranked as “high” using the DSEWPAC rating scale. These plans are provided in Appendix F, Table 10.

Suggested risk mitigation measures include:

- The development and implementation of an audit regime to regulate industry operators and timetable for implementation.
- The development and rollout of a familiarisation/training program for operators to provide:
    - Detailed information on the specific reporting requirements of the Standard.
    - An explanation of the introductory comments of Appendix 1 to the DIIS to ensure the contents are included into a training session for delivery to operators as outlined in the risk treatment plans above.
    - the requirements of the *Hazardous Waste Act 1989 a*nd how they apply to DIIS associated activities
    - Guidance on the environmentally sound removal of electronic equipment as outlined in Appendix 1 (of the DIIS)
    - Information on the safe removal of components prior to processing
- The approved arrangement should ensure that DSEWPaC is consulted in relation to all training material and provided the opportunity to participate

3.5. International Best Practice Review

The DIIS has been reviewed against key international standards that are used for similar programs around the world in accordance with the methodology outlined in Section 2.2 of this report.

Using the DIIS structure as a guide, features of the DIIS have been tabulated against selected standards that are used that underpin similar programs in other countries, identifying any gaps. The standards chosen for this comparison were the Canada Electronics Recycling Standard, the European WEEELABEX normative requirements (on Collection, Logistics and Treatment) and the USA's e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment.

Five gaps in the DIIS were identified:

- Does not require written policies for hygiene, eating and drinking to reduce worker exposure to contaminants
- Does not require establishment of health and safety committee
- No specification on amount that can be stored at any given time
- No data security required
- No specific requirements for CRTs and flat panel displays

The complete review is provided in Table 11, Appendix G.

4. Costs analysis

4.1. Collection location costs

The DIIS does not require ISO 14001 certification of collection locations. However, skeletal elements of an EMS, or a similar simple set of systems and procedures, would be required to ensure compliance with the DIIS. Establishing, maintaining and demonstrating compliance to such a system is described and costed in Table 1 below, for facilities not yet established, noting the applicable assumptions from section 2.3.2.

Table 1: Cost of implementation of DIIS for collection locations (new)

DIIS implementation requirement	Estimated cost ($) per site	Type of Cost
System establishment to DIIS requirements	$2,000 - 5,000	Establishment – first year only
Internal Audit	$1,000	Operational – ongoing, assume annual
Periodic random audits	$2,000 - $5,000	Operational – assumed every 3 years
Making the system work (refresher training, maintenance, integration into business processes)	$8,000	Operational - annual
Reporting to PSO	$3,000	Operational – assumed annual
Establishment of data collection and record keeping systems	$9,000	Establishment – first year only
Total (1st year)	**$25,000 - $31,000**	
Average cost per year (over 3 year cycle)	**$16,000 - $18,000**	**$25-31K year 1, $12K year 2, $12K year 3**

A closer inspection of both the DIIS General Requirements and those specific to collection locations suggests that compliance with the DIIS is largely an exercise in meeting existing legal obligations. Aspects such as risk management, legal compliance, emergency response, environmental management, data security and waste transport/disposal are already required to be addressed under State and Territory OH&S, environment, privacy, waste transport and dangerous goods laws.

Some record keeping systems would have to be in place to allow compliance with the laws above; however it is reasonable to assume a cost for further development of such systems to meet the DIIS's evidence of compliance obligation.

Stripping away these 'business as usual' costs listed above, existing collection locations would face a much lower cost of compliance with the DIIS than new entrants. For these companies, annual costs would shrink to $9,500-$12,500 for year one and just $5,200-$6,200 per annum averaged over the first 3 years (see Table 2).

Table 2: Cost of implementation of DIIS for collection locations (existing)

DIIS implementation requirement	Estimated cost ($) per site	Type of Cost
Periodic random audits	$2,000 - $5,000	Operational – assumed every 3 years
Reporting to PSO	$3,000	Operational – assumed annual
Establishment of data collection and record keeping systems	$4,500	Establishment – first year only (assumed existing systems would be upgraded costing 50%

		of new system establishment
Total (1st year)	**$9,500 - $12,500**	
Average cost per year (over 3 year cycle)	**$5,200 - $6,200**	**$9.5-12.5K year 1, $3K year 2, $3K year 3**

Another more obvious consideration when examining the costs for existing collection locations is this: in cases where Councils currently offer e-waste collection for their residents these services are costs that are being borne by such Councils. For example, one NSW Council member of the North East Waste Forum has allocated $105,000 in 2010/11 to provide this service.

The whole purpose of the product stewardship intervention is that collection/ recycling of these wastes is not cost-effective on its own. While not directly related to the introduction of the DIIS, the fact that such operators stand to save significant money from the introduction of the scheme, through cost subsidy by producers, cannot be overlooked when assessing impacts to collection locations.

4.2. Transportation costs

The DIIS does not require ISO 14001 certification of transport companies. However, skeleton elements of an EMS, or a similar simple set of systems and procedures, would be required to ensure compliance with the DIIS. Establishing and maintaining compliance to such a system is described and costed in Table 3 below, for facilities not yet established, noting the applicable assumptions from section 2.3.2.

It is noted that the DIIS as it stands has no mechanism for ensuring transporter compliance, so external audit costs have not been included. Another important difference (to collection locations) is that the transporter estimates below are based on a company rather than a site.

Table 3: Cost of implementation of DIIS for transporters (new) per company

DIIS implementation requirement	Estimated cost ($) per entity	Type of Cost
System establishment to DIIS requirements	$2,000 - 5,000	Establishment – first year only
Internal Audit	$1,000	Operational – ongoing, assume annual
Making the system work (refresher training, maintenance, integration into business processes)	$4,000	Operational - annual
Total (1st year)	**$7,000 - $10,000**	
Average cost per year (over 3 year cycle)	**$5,700 - $6,700**	**$7 – 10K year 1, $5K year 2, $5K year 3**

Also, similar to the discussion for collection facilities in 4.1, the DIIS's general and specific requirements to transporters are all legal requirements that would be expected to be accounted for in day to day business, particularly as the DIIS currently does not require transporters to undertake reporting to the PSO, nor does it prescribe transporters to be audited for compliance.

Removing such 'business as usual' costs reduces the additional costs imposed by the DIIS for existing transporters of this type of waste, perversely, to zero.

4.3. Primary recycler costs

Costs discussed below for recycling companies focus largely on the costs of establishing, and having certified, an ISO 14001 compliant Environmental Management System, as this is a key requirement for recyclers in the DIIS.

Establishment of an ISO 14001 compliant system involves the following activities:

Gap analysis and scoping

This stage includes reviewing existing documentation and completing an analysis of the gaps in the current system in terms of the requirements of ISO 14001.

Aspects and Impacts, Framework EMS and Objectives and Targets workshops

This involves the facilitation of several workshops with key operational and management staff to identify the aspects and impacts of all operations at the facility, presentation of the "skeleton" EMS document and to develop objectives and targets for EMS that are appropriate, realistic and measurable.

Draft EMS development

This step involves the preparation of all system documentation, and includes all of the requirements stipulated under ISO 14001 such as the draft EMS manual itself, as well as registers, procedures and forms.

EMS Training

Once the system has been developed a training package must be developed and delivered for staff to facilitate implementation of the EMS across all levels of the organisation.

Internal Audit

Following a period of implementation of the EMS within the organisation, an internal audit should be undertaken to identify any non compliances or other potential issues with the EMS implementation prior to application for accreditation.

Other costs as a direct result of implementation of the DIIS would include third party certification of the established system, follow-up audits, environmental/ OHS monitoring costs, reporting requirements as part of the program (including data gathering, management and record keeping) and downstream processor due diligence in the form of the procurement process' assessment of environment and health and safety risk, as well as periodic audit during operation of the contract.

All of these requirements for recyclers are costed in Table 4 below.

Table 4: Cost of implementation of DIIS for primary recyclers (without ISO 14001 certification)

DIIS implementation requirement	Estimated cost ($) per entity	Type of Cost
EMS establishment		
Gap analysis and scoping	$2,000 - $5,000	Establishment – first year only
Aspects and Impacts workshop	$2,000 - $5,000	Establishment – first year only
Framework EMS workshop	$2,000 - $5,000	Establishment – first year only
Objectives and Targets Workshop	$2,000 - $5,000	Establishment – first year only
Draft EMS established	$8,000 - $20,000	Establishment – first year only
EMS Training	$2,000 - $5,000	Operational – ongoing, annual
Internal Audit	$2,000 - $5,000	Operational – ongoing, assume annual
ISO 14001 certification		
Initial certification	$4,000 - $10,000	Establishment – first year of 3 year life of certification
Follow up audit by certifier (one per year)	$2,000	Operational - annual
Making the EMS work (refresher training, maintenance, integration into business processes)	$20,000 - $40,000	Operational - annual
Requirements of DIIS likely to be additional to ISO 14001		
Environmental monitoring (air quality and noise) – baseline assessment	$10,000	Establishment – first year only but could involve ongoing monitoring if problem identified
Reporting to PSO	$6,000	Operational – assumed annual
Establishment of data collection and record keeping systems	$18,000	Establishment cost – first year only
Downstream processor procurement due diligence re HS&E	$5,000	Contract establishment
Downstream processor periodic audit	$2,000	Operational – assumed annual
Total (1st year)	**$87,000 – $143,000**	
Average cost per year (over 3 year cycle)	**$52,000 - $88,000**	**$87-143K year 1, $34-60K year 2, $34-60K year 3**

When an ISO certified quality system is required to be built and maintained from a base of no existing system at all, Table 4 demonstrates that significant costs are involved. In reality, the majority of existing recyclers are already ISO 14001 certified. Based on a brief review of the companies that contributed to the Wright/ Rawtec report[8], it appears that the overwhelming majority of recyclers currently operating in Australia are already certified to ISO 14001.

Indeed many would also be expected to have reasonable systems in place for data collection and reporting and even have undertaken and continue to undertake air quality monitoring in risk areas of

[8] A Study of Australia's Current and Future E-Waste Recycling Infrastructure Capacity and Needs, Wright Corporate Strategy/ Rawtec October 2010

their operations, as part of legal compliance with Work Safe requirements. For such companies, much of the costs of Table 4 fall away as "business as usual" costs.

Assuming half of the costs for establishment of data collection/ record keeping systems are required by the DIIS as additional (upgrade of existing systems), for companies with existing ISO 14001 certification, annual costs would shrink to $22,000 per annum for year one and $13,000 per annum averaged over the first 3 years (see Table 5).

Table 5: Cost of implementation of DIIS for primary recyclers (with ISO 14001 certification)

DIIS implementation requirement	Estimated cost ($) per entity	Type of Cost
Reporting to PSO	$6,000	Operational – assumed annual
Establishment of data collection and record keeping systems	$9,000	Establishment cost – first year only (assumes upgrade of existing systems)
Downstream processor procurement due diligence re HS&E	$5,000	Contract establishment
Downstream processor periodic audit	$2,000	Operational – assumed annual
Total (1st year)	**$22,000**	
Average cost per year (over 3 year cycle)	**$13,000**	**$22K year 1, $8K year 2, $8K year 3 (assuming 3 year contracts)**

4.4. Downstream processor costs

While downstream processors are an important party to the National Television and Computer Product Stewardship Scheme, they are not directly required to comply with the DIIS because they will not be contracted directly by the PSO. However, the primary recycler may choose, as part of due diligence in their procurement process, to require a downstream processor to comply with the DIIS as a condition of contract.

At this stage no costs associated with implementation of the DIIS have been levied at downstream processors as part of this analysis.

4.5. Program administration costs

The PSO is the industry body that would administer the program and government would also continue to have an administrative role once the program commences. Both of these costs are estimated in the Decision RIS[9] (Table 23). These costs are not directly impacted by the presence of the DIIS as compliance with the DIIS applies only to collection locations, transporters and primary recyclers.

4.6. Discussion

Estimates for annualised costs averaged over three years and first year costs, for each program participant as an existing supplier of these services, are summarised in Table 6.

Table 6: Summarised costs of DIIS implementation per participant (existing)

Program Participant	Estimated annual cost ($) per entity	Estimated first year cost ($) per entity
Collection location	$5,200 - $6,200	$9,500-$12,500
Transporter company	$0	$0
Recycler	$13,000	$22,000

[9] Environment Protection and Heritage Council Decision Regulatory Impact Statement: Televisions and Computers, October 2009 – PWC/ Hyder Consulting

Estimates for annualised costs averaged over three years and first year costs, for each program participant as a new entrant, are summarised in Table 7.

Table 7: Summarised costs of DIIS implementation per participant (new)

Program Participant	Estimated annual cost ($) per entity	Estimated first year cost ($) per entity
Collection location	$16,000 - $18,000	$25,000 - $31,000
Transporter	$5,700 - $6,700	$7,000 - $10,000
Recycler	$52,000 - $88,000	$87,000 – $143,000

The key observation from Table 6 is that the DIIS imposes low to negligible cost to all 3 participants, where they are an existing business carrying out these activities. This is because so much of the DIIS's requirements are already in place as 'business as usual' activities for these companies.

Equally, the key observation from Table 7 is that costs for new entrants are much higher, with the increasing scale of cost a reasonable reflection of the increasing risk of environmental or occupational health and safety harm that is possible from the activities of each participant with respect to TV and computer waste. Costs to a new recycler entering the market are by far the highest, because there is significant cost in establishing and maintaining an ISO 14001 system, when coming from a base of no existing system.

The question this raises is whether the DIIS poses an unreasonable burden on such companies, thereby providing a financial barrier to new entrants.

For transporters, this is a redundant question, as the introduction of this scheme is unlikely to be reason alone for a new entrant into the mature industry of waste transport. Besides this, the costs are low and associated entirely with existing legal compliance for the industry.

For collection locations, two thirds of costs to a new entrant are also associated with simple legal compliance, which would have to be borne by a new organisation regardless of the existence of the DIIS. This leaves an average annual cost directly as a result of compliance with the DIIS of approximately $6,000, which is not a barrier for entry, given the projected size of the market.

Lastly for new entrant recyclers, there are substantial costs involved, particularly in relation to ISO 14001 establishment and certification. However, given the majority of existing recyclers are already ISO 14001 certified, then this appears to be simply a cost of participating, and managing the risks inherent, in the industry, unrelated to the introduction of the DIIS. By this logic, costs specifically imposed by the DIIS for this group reduce to exactly the same as those for existing recyclers (Table 6) and are therefore not prohibitive to new entrants.

Another way to gauge the relative cost of implementation of the DIIS for the new recycler is to compare this to the potential size of contracts possible under the program. The Wright/ Rawtec report[10] (Figure 5-6, p.39) models four scenarios of the number of units likely to be recycled over the first ten years of the program. At the end of the first 3 years, the average annual number of units recycled across these different scenarios is approximately 18 million units (range from 10-25 million units). The Decision RIS estimates the cost to recyclers at $4/unit (Table 22, p.113). This calculates to a potential annual recycling market after 3 years of $70M. Assuming approximately 8 key players active in that market, this makes a potential contract worth around $9M per year per player. Even assuming the highest range of annual costs of compliance with the DIIS for new entrant recyclers ($88,000 per year), this equates to 1% of potential revenues from the program after 3 years.

[10] A Study of Australia's Current and Future E-Waste Recycling Infrastructure Capacity and Needs, Wright Corporate Strategy/ Rawtec October 2010

5. Stakeholder views

Consolidated stakeholder comments received on the DIIS are provided at Appendix A. These comments have been taken into account in drafting the recommendations in Section 7. Some of the pertinent issues raised were.

- Reuse not promoted;;
- Brominated Flame Retardants (BFRs) not properly managed
- Other hazardous materials not properly managed;
- No minimum recycling rate/ impact on landfilling;
- No guidance on minimising carbon emissions ;
- Limited mention of packaging waste recycling;
- Reporting and Records Management questions;
- Negative impacts on charity organisations/ social enterprises;
- Clarification/ concern about auditing, compliance and enforcement arrangements;
- Appropriateness for the Australian context;
- Costs;
- Prison labour concerns; and
- Signage and public communication.

6. Conclusions

6.1. Risk

Having conducted a thorough risk assessment of the DIIS and associated documentation and studies, the following conclusions can be drawn:

- Despite adequate control measures included in the DIIS, there are a number risks that, simply due to their potential consequence, ranked high and are difficult to further mitigate through improved controls.
- The high ranking risks relate specifically to the following key areas:
    - *General operating requirements*: - lack of systems and procedures to ensure safe work methods.
    - *Carbon emissions from associated recycling practises*
    - *Safe removal of critical components prior to shredding or treating: -* leads to unnecessary exposure to hazardous substances and/or causes a fire
    - *Regulatory and transport risks: -* associated with the export and sale of recovered components under the Hazardous Waste Act and the Basel and Stockholm conventions.
- Whilst a risk treatment plan has been developed as part of this review (refer to Appendix F) for every high ranking risk, a number of the "medium' risks were also deemed to have inadequate controls in place. The "Medium" ranking risks with incomplete or weak controls were:
    - *EOL goods received at an unsuitable premises/location that is operated by an unauthorised recycler.*
    - *Inappropriate separation techniques are applied to recover resources.*
    - *Failure to ensure staff are provided with necessary personal protective equipment.*
    - *Failure to appropriately separate materials for recycling.*
    - *Improper mechanical or manual dismantling results in the release of hazardous substances to which employees are exposed.*
    - *Inappropriate secondary application of recovered resources eg: use of leaded glass from plasma screens as a substitute for sand.*
    - *Lack of minimum recycling rate or requirement for highest use practices, in the DIIS discourages recyclers from recovering materials leading to unnecessary disposal to landfill.*
    - *Failure of the DIIS to require identification of hazardous substances prior to disposal.*
    - *Brominated Fire Retardant contaminated plastics are sent to landfill.*
    - *Failure of the DIIS to accurately define the role of recyclers results in uncontrolled practices.*
    - *Failure to separate substances of concern for integrity and traceability.*

Improvement suggestions to enhance the strength of the controls for medium rated risks have been developed and included in the risk assessment table (Table 8 - Appendix D).

In conducting the risk assessment, KMH has also considered the adequacy of the DIIS for auditing and validation requirements in associated contracts between the industry-led National Television and Computer Product Stewardship Scheme and service providers. As highlighted in the risk assessment table, the DIIS in its current format refers to and provides guidelines that are extracts from other international standards/ guidelines without formally adopting or prescribing these other references as a part of the DIIS. For auditing and validation purposes the Standard needs to be more prescriptive in its adoption of other international standards. A number of improvement suggestions are included in the risk assessment table. In summary these include:

- The implementation of a structured auditing regime to regulate the industry
- Guidelines provided in Appendix 1 (extract from a Canadian guideline) should be rewritten to be more prescriptive and become a formal requirement of industry operators/recyclers. This appendix should be re-titled along the lines of "Detailed Requirements for Environmentally Sound Recycling of EOL Televisions and Computers"

- Appendix 5 of the DIIS provides a checklist of requirements for employees working in the facilities. This should become a mandatory requirement and auditable record as a part of the industry certification process.

While a number of inconsistencies with international standards of a similar nature were identified, only the requirement to specifically include written policies for hygiene, eating and drinking, as a means of managing exposure to harmful substances such as lead, is suggested as an outcome of the international best practice review.

International obligations such as the Basel and Stockholm conventions apply directly to the Australian Government as the party to the agreement, who in turn put policy/ monitoring/ legal responses (controls) in place to ensure compliance. The DIIS applies to scheme participants who are not parties these conventions. Consequently the DIIS does not directly influence these conventions, but it should not lead to behaviours on the part of scheme participants that could risk Australia's compliance with them. While the DIIS's unresolved position on the management of BFR-containing plastics could be argued as just this, due to the temporary exemption for recycling of such materials it is technically not in breach of these aspects of the Stockholm Convention. The regulations will require that the Regulator is satisfied that the environmental and OH&S standards have been met.

6.2. Cost

Annual costs imposed as a result of requirements to comply with the DIIS, averaged over a three year cycle, for transporters, collection locations and recyclers are provided in Table 6 and can be summarised as:

- Transporters $0;
- Collection locations $5,200 - $6,200; and
- Recyclers $13,000.

The DIIS imposes low to negligible cost to all 3 participants, where they are an existing business carrying out these activities. This is because so much of the DIIS's requirements are already in place as 'business as usual' activities for these companies.

While costs to new entrants are much higher (as shown in Table 7), subtracting out those costs of DIIS compliance that can be demonstrated to be 'business as usual' for entry into this market, regardless of the presence of the DIIS, reduces new entrant costs to be identical to those for existing service providers (see dot points above). These figures are the true costs of DIIS implementation for all providers, i.e. those that can be attributed to DIIS compliance over and above any existing industry norms or legal requirements.

Accounting for these as inherent costs of doing business in this sector, which also happen to be required by the DIIS, the DIIS does not pose an unreasonable burden, or provide a financial barrier, to new entrants.

The requirement for recyclers of certification to a standard such as ISO 14001 is appropriate to maximise the chance of mitigating these risks, which comes at a cost. Because such systems are pre-existing for most current players the estimated additional cost of $52,000 - $88,000 per annum can more accurately be seen as $13,000 per annum for the majority.

Put another way, even at $88,000 per year, the impact to recyclers is 1% of the potential share of contracts likely to be available to them from the program by the end of year 3.

It has been suggested that the requirement for recyclers to be ISO 14001 certified could either be applied from day one operation of the program, or alternatively contracts could be let to companies who haven't yet attained certification but are in the process of seeking it.

The former has the advantage of lowest risk, simply because there is strong assurance that the DIIS can be met from the onset of the program. It is evident that there are ample providers that have the capacity to supply the services now, who are ISO 14001 certified. The latter carries more risk to the PSO and ultimately Government, in the event that a significant incident occurs.

ISO 14001 should be a requirement from day one since it is the most effective option to prevent the occurrence of incidents related to environmental or occupational health and safety. However, there may be circumstances where consideration could be given to contracting a non-ISO 14001-certified recycler, such as to minimise transport costs/ emissions by using a local provider in a remote location, or where the environmental outcome may clearly be more beneficial through using a non-certified

supplier over a certified one. It may be prudent to allow for this situation, on the assumption that it will be rare, and that such a decision be subject to:

- a risk assessment;
- the supplier already having a functioning (if not certified) system in place; and
- auditing of the supplier be carried out before contracts are established, to satisfy the PSO that it can comply with the DIIS.

7. Recommendations

7.1. Risk

The risk assessment process recommends a number of opportunities for improvement prior to consideration by the Regulator of the DIIS. The following recommendations provide directions that once adopted will enhance the strength of the Standard and ensure the overall objective of "*ensuring EOL Television and Computers are managed safely and in an environmentally sound manner at the end of their useful life .....*" is achieved. Our recommendations are:

1. *Develop an education/training/familiarisation plan to accompany the DIIS -* the majority of the risk treatment plans suggest additional information be provided to stakeholders in a formal manner such as a training program, to ensure service providers fully understand the requirements of the DIIS and the information contained in other related documents to which the DIIS refers.
2. *Implement the risk treatment plan -* according to Appendix F.
3. *Adopt additional control measures for medium risks*
4. *Formalise Appendix 1 as prescriptive requirements:-* information currently contained in the guidelines of Appendix 1 provide useful information that should be more prescriptive and become a formal requirement of industry operators/recyclers. This information has been extracted from the Electronics Product Stewardship Council of Canada Guidance Document on Environmentally Sound Recycling of Electronics. Whilst the Preface of the DIIS states that it is based on a number of international e-waste standards particularly the Canadian standard, it falls short of formally adopting this Standard and thus requiring adherence to these guidelines.
5. *Auditing regime to ensure operational best practice throughout the industry:-* develop and communicate an auditing schedule to notify operators of what they can expect along with associated penalties for non conformance.
6. *Add written policies for hygiene, eating and drinking:-* to reduce worker exposure to contaminants. This should be added to section 4.1 Risk Management, of the DIIS, with guidance taken from the Canadian standard, ie:

   > *"Implement policies and procedures for hygiene, eating and drinking to reduce worker exposure to lead and other toxic substances."*

7. *Consider International obligations:-* We recommend that the Department continue to consider the relevance of the Basel and Stockholm Conventions in providing its position on the DIIS, particularly in relation to the DIIS's unresolved position on the treatment of BFR-containing plastics. The Commonwealth Government's apparent lack of a control to mitigate the risk of export of a Stockholm Convention POP for inappropriate use, as identified in the Regulatory Risk Review of Appendix F, should be further assessed and resolved.

   By contrast, it is the industry's responsibility to ensure that in implementing the DIIS they meet all Australian legal requirements.

7.2. Cost

8. *No changes to the DIIS are recommended* directly as a result of the cost burdens estimated in Section 4 of this report.
9. *ISO 14001 Requirement:-* ISO 14001 should be set as a requirement from day one since it is the most effective option to prevent the occurrence of incidents related to environmental or occupational health and safety. However, there may be circumstances where there is a legitimate advantage to contracting a non-ISO 14001-certified recycler, such as to minimise transport costs/ emissions by using a local provider in a remote location, or where the environmental outcome may clearly be more beneficial through using a non-certified supplier over a certified one. It is recommended to allow for this situation, on the assumption that it will be rare, and that such a decision be subject to:
   - a risk assessment;
   - the supplier already having a functioning (if not certified) system in place; and
   - auditing of the supplier be carried out before contracts are established, to satisfy the approved arrangement manager that it can comply with the DIIS.

7.3. Other

A number of other recommendations arising from stakeholder comments and our general review of the document are suggested. These are:

10. *Clarification amendments to the document:-* Improve the purpose and accuracy of the DIIS by making the following editorial changes:
    - **Section 1. "Scope**": *"This Interim Industry Standard applies to the drop-off, collection, transport and recycling~~, and disposal~~ of products covered under the National Television and Computer Product Stewardship Scheme ie End of Life (EOL) Televisions and Computers*."
    - **Section 2. "Application"**: Include a paragraph clarifying situations where the DIIS must be followed and where it strongly suggested as guidance in non-PSO contracts, ie:

      "The Interim Industry Standard applies to contracts between the PSO and service providers it contracts with. While not specifically subject to this standard, arrangements between direct service providers and their sub contractors (i.e. downstream processors) should be guided by this standard."
    - **Section 2. "Application, Note 1"**: *"However it is expected that an auditing regime will need to be in place under the National Television and Computer Product Stewardship Program to monitor compliance of collection locations and transporters."* While noted that "periodic random audits" would more likely be weighted towards collection locations, leaving transporters subject to no checking mechanism at all is not acceptable.
    - **Section 4.1. "Risk Management, Note 2"**: *"Information on Exposure Standards is available from Safe Work Australia's Hazardous Substances Information System (available at www.safeworkaustralia.gov.au)*
    - **Section 4.6. "Reporting"**:
      - *"Collection Locations, Transporters and Recyclers shall provide reports to the Product Stewardship Organisation as follows:"*
      - Insert heading before section 4.6 a as follows: *"For Collection Locations, Transporters and Recyclers"*
      - Insert heading before section 4.6 b as follows: *"For Collection Locations and Recyclers"*
    - **Section 4.7. "Records Management"**: *"~~The~~ Recyclers, Collection Locations and Transporters shall maintain and make available for audit documentation evidencing compliance with this Interim Standard."*
    - **Section 6.2. "Export Transport Requirements"**: Is the reference to "Road and Rail Transport Acts" appropriate to export requirements? If so it should be made more specific.
11. *Promotion of the Waste Hierarchy:-* Include mechanisms to ensure legitimate reuse opportunities are not wasted, such as stating that items should be collected/ handled/ transported so they are not damaged before they are assessed for reuse possibilities, or including the amount of equipment reused as part of recycler reporting requirements. (It is noted that the DIIS explicitly excludes reuse from the standard.)
12. *Prison labour:-* Anecdotally prison labour is not routinely used in the Australian recycling industry. Delete references to it as it appears to have been more of an issue in overseas schemes.
13. *Signage guidelines:-* While not required as part of the DIIS, it is recommended that signage guidelines for collection locations are developed as a linked document referenced by the DIIS, to promote safe drop-off practices and to ensure consistency of message and branding for the program.

8. References

- Draft Interim Industry Standard: Collection, Transport & Recycling of End of Life Televisions and Computers v6, PSA- AIIA, November 2010
- Stakeholder feedback on the DIIS provided by DSEWPaC (see Appendix A)
- DSEWPaC - Risk Management Guidelines
- National TV and Computer Product Stewardship Scheme Implementation Working Group - Stakeholder Risk Analysis Workshop Outcomes
- AIIA E-Sig/PSA National Televisions And Computers Product Stewardship Program (Including PRO Plans) Discussion Paper For Planning Purposes Draft, December 2010
- WEEELABEX normative requirements on Collection, draft v 7.2, October 2010
- WEEELABEX normative requirements on Logistics, draft v 7.2, October 2010
- WEEELABEX normative requirements on Treatment, draft v 7.2, October 2010
- UNEP - *Sustainable Innovation and Technology Transfer Industrial Sector Studies* Recycling From E-Waste to Resources,
- Environmental and Human Health Risks Associated with the End-of-Life Treatment of Electrical and Electronic Equipment - Institute for Global Environmental Strategies (IGES), Japan
- Electronics Recycling Standard 2009 – Electronics Product Stewardship, Canada
- The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment July 2009 – e-Stewards,
- A Study of Australia's Current and Future E-Waste Recycling Infrastructure Capacity and Needs, Wright Corporate Strategy/ Rawtec, October 2010
- Environment Protection and Heritage Council Decision Regulatory Impact Statement: Televisions and Computers, October 2009 – PWC/ Hyder Consulting (Decision RIS)

Appendix A

Consolidated Stakeholder Comments on the DIIS

Sector	Comment
Question 1: Has best practice performance been promoted, rather than minimum requirements, for the collection, storage, handling, transport and treatment of end-of-life televisions, computers and computer peripherals?	
Local Government	**Leichhardt Council** – • Education on End of Life vs Reuse - for best practice to be promoted an overarching education/communication message must be that the Scheme is for 'scrap and end of life' only. The community in general, does not differentiate between reuse and recycling. Monitoring of downstream processes is limited. This is of concern in general and particularly in relation to eg Brominated Flame Retardants (BFR). If there is no acceptable way of separating BFR – then ban it in the manufacturing process. • Greater emphasis needs to be placed on design to ban substances that cannot be appropriately recycled without environmental and health consequences
Industry Association	**AMTA** - • The document outlines the minimum requirements that AMTA would expect from their collectors, transporters and recyclers except perhaps in the traceability and downstream recycling part. • It is not just the substances of concern that need to be traced through to point of final disposition but all materials, likewise it needs to be traced beyond the next downstream processor as in some instances there will be a second or even third downstream processor. With an emphasis on the resources recovered – even if they loose track of the individual item verification that the materials have arrived and gone through a process with a particular outcome should be reported • It is difficult to say if they are best practice but what has been included is quite thorough. • There perhaps a lack of detail on the type of containers that items need to be stored and transported in and also in clause 4.7 page 11 records management = shouldn't this apply to the collectors and transporters as well??And in regard to 4.6 on same page I would expect the transporter would need to advise the PRO or its client of any incidents?
NGO	**Community Recycling Network (CRN)** – No • The DIIS and National Program needs to be in alignment with the National Waste Policy and put reuse ahead of recycling to ensure the highest environmental outcome. • The DIIS provides no guidance on who will determine whether equipment received for recycling is in fact at 'end-of-life'.

	Consumers and Businesses wanting to recycle their 'end-of-life' equipment may do so for many reasons not just because the equipment is at its end-of-life. For example it could be unwanted but still have a good second life. • Although the DIIS only deals with 'end-of-life' equipment, the reality is that equipment which is suitable for refurbishment / reuse will be received as part of the National Program. This needs to be addressed as part of the DIIS. • The DIIS mentions that industry will be working with other stakeholders to ensure that there are mechanisms to remove product that still has value from the waste stream before it is collected through the National Program, no details of how this will work have been communicated, it needs to be a part of the DIIS. • The DIIS needs to promote reuse and provide guidance on how items are collected, handled, transported i.e. items should be collected / handled / transported so they are not damaged before they are assessed for reuse possibilities. • The DIIS states that there are existing avenues available for refurbishment and reuse but doesn't give any guidance on how collectors / recyclers should deal with equipment that is suitable for refurbishment / reuse or how they connect and work with the existing refurbishment and reuse avenues. • Also, most major recyclers have their own reuse arm and are all in the reuse market. They refurbish, remarket/sell and export so can easily determine what equipment can be reused. This brings with it another issue, how will the PRO know if a recycler has received equipment suitable for reuse under the scheme. What is stopping a recycler from claiming a recycling fee for the equipment but instead of recycling it they refurbish it and sell it offshore therefore making profit twice - firstly for the so called "recycling" and secondly for the resale of refurbished equipment. • The DIIS should ensure that as part of the reporting process recyclers are to keep records / data on the amount of equipment received that is suitable for reuse. • Although the DIIS doesn't consider refurbishment / reuse at present, down the track the data collected from recyclers can be reviewed in order to improve standards, performance, social and environmental outcomes of the National Program if the data collected indicates there is a need (a high percentage of equipment suitable for reuse was received for recycling). • Refurbishment / reuse shouldn't be ruled out from being included further down the track i.e. as part of the Australia Standard particularly after careful consideration and review of refurbishment / reuse data. • Many charity groups and community recyclers have long been involved in the refurbishment and reuse of computer equipment in order to address the growing tide of e-waste, provide employment and training opportunities for disadvantaged Australians and enable marginalised individuals and community groups access to technology. The DIIS could have a major (negative) impact on the supply of computer equipment to existing charitable refurbishment and reuse programs thereby creating adverse social and environmental outcomes if refurbishment / reuse isn't included. • As per the attached Hyder Report "The Role of Not-For-Profits in Managing E-Waste": The federal government needs to acknowledge that the participation of NFP agencies in e-waste management, in particular in the refurbishment of

	computers, leads to a better environmental outcome and has immense social benefits. To that end, the federal government needs to ensure that the product stewardship scheme does not create the perverse outcome of a reduction in the refurbishment of equipment, or a diminution in the involvement of NFP agencies in e-waste management. • The DIIS should specify what an acceptable level option is before landfill becomes the only remaining option. Note that the option will vary between businesses and undermine the industry if a minimum criteria level is not specified. • The DIIS is not supporting best practice performance through the use of statements that allow recyclers to use their own discretion and interpretation on what they think is an environmentally sound solution i.e. • Recyclers shall not use landfill, energy recovery or incineration as standard practice for disposal, unless the practice can be shown to be the most environmentally sound solution (pg 15) • The DIIS should stipulate what is acceptable and the most environmentally sound solution not leave it open to others to misconstrue and abuse. **Total Environment Centre (TEC) / National Toxic Network (NTN)** - • The DIIS has not promoted best practice performance. Worse, it barely achieves minimum requirements for the collection, storage, handling, transport and treatment of end-of-life televisions, computers and computer peripherals. • The Draft Interim Industry Standard (DIIS) is one of the most critical elements in the delivery of the Australian Government's National Television and Recycling Scheme. The choice modelling study in the Regulatory Impact Statement that underpins the rationale for the Scheme clearly shows that consumers are willing to pay for recycling. Consumers were not asked, however, if they would be willing to pay for recycling if it was going to be well below best practice. It is unlikely that consumers would be willing to pay for 'recycling' if it contravened the principles of international laws on the treatment of hazardous materials; if it sent contaminated materials back into their homes as 'recycled' products; if it allowed end-of-life products to go to landfill; or if it allowed a resurgence of incineration. If either the DIIS or the future Australian Standard approve less than best practice, the justification for the Scheme will be undermined. • The importance of the DIIS is further reinforced by the fact that it may operate as part of commercial-in-confidence contractual arrangements between Producer Responsibility Organisations (PROs) and recyclers, rendering recycling practices and outcomes non-transparent and resistant to public scrutiny. For this reason, it is critical that the DIIS is able to withstand distortion and provides television and computer consumers and the broader community with assurance that their expectations are being met. A recycling standard that allows for less than best practice could rightly be accused of 'greenwash'. • The view expressed by some that the standard cannot take account of current international agreements because Australia has not yet ratified the 9 new POPs is a moot argument. Australia will ratify the 9 new POPs and will take account of the work of the POPs Review Committee. For the Australian industry standard to be accepted by the community it must be seen as progressive, best practice and in line with the rest of the developed world. Anything less risks community

	scepticism and loss of confidence in recycling in Australia. • The current DIIS does not promote best environmental practice performance for the recycling of televisions and computers. Of particular concern are: o Major loopholes for landfilling of materials o Major loopholes for the incineration of materials o No prevention of down-scaling of materials o No mechanism to ensure reuse options are not compromised o Allows the recycling of hazardous materials back into new products o No requirements for the separation and proper treatment of hazardous wastes o No minimum recycling rate • 1.1 Principle of Ensuring Highest Resource Use - The DIIS guiding principle of 'Ensuring that the highest resource value is maintained' (p. 8) is excellent in theory however it is not applied in practice in the body of the document. Instead, a range of contradictory approaches allow recyclers to adopt well below best practice standards. The directive for recyclers to 'use Guiding Principle 4 in assessing the most suitable recycling option' is completely misleading as the two drivers for recycler behaviour will be commercial realities and the minimum standards to apply in the Interim Standard and the future Australian Standard. This can be rectified by: o deleting this statement o requiring certain highest use practices, set out in the Material Processing and End Use Acceptability Table o applying an initial minimum 90% recycling rate for televisions and computers (excluding contaminated plastics), rising to 95% after 5 years. • 1.2 Principle of Minimising Carbon emissions - The guiding principle of 'Carbon emissions are minimised' (p. 8) is excellent in theory however it is not applied in practice in the DIIS. To put this principle into practice would require a series of life-cycle analyses to determine the best outcome. We recommend that the DIIS acknowledges this and outlines potential future work that could be undertaken to inform the Australian Standard on E-waste Recycling. • 1.3 Principle of Landfill as a Last Choice Destination - The guiding principle of 'Landfill is a last choice destination only – all other options must be exhausted before disposition to landfill' (p.8) inappropriately creates loopholes by allowing unconstrained disposal to landfill. There is no means by which to evaluate the circumstances in which 'all other options have been exhausted', leaving it open to individual recyclers to decide whether and how much material they landfill. This can be rectified by deleting this statement and applying a minimum 90% recycling rate to the Material Processing and End Use Acceptability Table.

	• 2. Treatment of Hazardous Materials - Electronic waste contains a range of chemicals and materials which can be toxic, corrosive and/ or bio-accumulative. Therefore, it is essential that hazardous materials be identified and separated from the general recycling stream to ensure it is properly treated. This reflects the intention in the National Waste Policy that: *…by 2020…Australia manages its products, materials and chemicals that contain potentially hazardous substances, in particular those that are persistent, bio-accumulative and toxic, consistent with its international obligations and using best available evidence, techniques and technologies*…(p.7) *Reduction of potentially hazardous content of wastes with consistent, safe and accountable waste recovery, handling and disposal*. (p.8) *Strategy 12 Product stewardship schemes address specific products that contain potentially hazardous materials.'* (p.13) The Television and Computer Recycling Scheme will generate large amounts of such hazardous waste that must, legally and morally, be treated in Australia. The DIIS, however, does not provide any guidance on the identification, separation and treatment of hazardous substances. Worse, it allows the landfilling, incineration, recycling and even export of these substances. Hazardous materials are contained in the following components: o cathode ray tubes o lead solder o leaded plasma display glass o other leaded glass o mercury-bearing lamps & switches o printed circuit boards o batteries (eg: from remote controls) o brominated flame retardant (BFR) contaminated plastics The hazardous substances must be treated as such, at the very least in accordance with Australia's international obligations. • 2.1 BFR contaminated plastics must not be recycled - Article 6 of the Stockholm Convention, of which Australia is a ratifying party, requires ratifying countries to: a) Develop and implement appropriate strategies for identifying stockpiles, products and articles in use that contain or are contaminated with POPs; b) Manage stockpiles and wastes in an environmentally sound manner;

c) Dispose of waste so that the POPs content is destroyed or irreversibly transformed;

d) Not permit the recycling, recovery, reclamation, direct reuse or alternative use of the POPs;

e) Endeavour to develop strategies for identifying contaminated sites and perform eventual remediation in an environmentally sound manner.

Further, Strategy 13 of the National Waste Policy states that:

> *The Australian Government…will adopt a system that aligns with international approaches, to reduce hazardous substances in products and articles sold in Australia that present a potential risk during and at end of life to human health, safety or the environment*. (p.14)

Two BFRs (the commercial mixtures of brominated diphenyl ethers, Penta and OctaBDE are referred to as POP-BDEs), along with 8 other new persistent organic pollutants (POPs), were recently banned under the Stockholm Convention. Australia supported the listing of these new POPs and is likely to ratify the changes in the near future. While a temporary exemption allows the recycling of BFRs, this is likely to come to an abrupt end within two years as the POPs Review Committee has recently recommended that recycling of articles containing listed POP-BDEs should only be performed if the articles are first treated and the POP-BDE are removed. Otherwise recycling of articles containing POP-BDE should be stopped as soon as possible. It is therefore unacceptable for the recycling of BFRs to be knowingly sanctioned by the DIIS under these circumstances.

International best practice for BFR contaminated plastics from e-waste now includes identification and separation. Standard commercial GC/MS analysis of PBDE in plastic and other materials is widely available in developed countries. This is largely because of the demand that has arisen over the past few years due to the requirements of Restriction of Hazardous Substances (RoHS) compliance and other national laws. Currently, the practical method for screening and separating PBDE-containing materials is the separation of all BFR-containing materials by online screening of the bromine content. Three technologies for bromine screening are applicable in practice:

A) Sliding Spark Spectra analysis (SSS) (hand held method)

B) X-ray Fluorescence (XRF) (hand held method);

C) X-ray Transmission (XRT) (for automated separation plants)

- 2.2 BFR contaminated plastics must not be landfilled - PBDEs in articles deposited in landfills are slowly released in leachates and into the atmosphere with further contamination of ground and surface water and sediments and soil. The toxicity of the PBDE mixtures can be substantially increased by debromination of the higher brominated PBDE (which are normally present in much higher concentrations) to the more toxic lower brominated congeners by the anaerobic processes in the landfill site. Importantly, when the persistence of PBDE in landfills is compared with the limited life-time of the engineered protection and management systems in landfills it can be seen that the landfilling of PBDE-containing articles can not be considered as a safe or sustainable solution, and it is inconsistent with the obligations of the Stockholm Convention.

- 2.3 BFR contaminated plastics must not be incinerated - Incineration of BFR contaminated plastics result in the formation of polybrominated dibenzo-p-dioxins and dibenzofurans (PBDD/DFs), and increasingly also polychlorinated/brominated dioxins and benzofuran (PXDDs/DFs) which can be released as air emissions or captured to some extent by pollution control devices and/or be deposited in ash. Both then require permanent storage. Enormous levels of PBDD/DF, PXDD/DF and PCDD/DF are formed in the incinerator's primary combustion zone when high levels of electronic waste are added. While in BAT incinerators some of these unintentionally formed POPs (UPOPs) can be destroyed in the secondary combustion zone, PBDEs and PBDD/DF are found at high levels in the bottom ash. This highly toxic ash then requires permanent disposal in hazardous waste landfill, defeating the original purpose of incineration and risking further releases to the environment.

- 2.4 Human health impacts of BFR contaminated plastics - The recycling of BFR contaminated plastics is set to contravene the Stockholm Convention within two years. Worse, however, is that the recycling of this material into new products will directly damage the health of Australians. In this respect, the DIIS statement on p. 28 is incorrect:

  > *Nearly all of the substances of concern in EOLE are no cause for concern for human exposure or release into the environment during ordinary use and handling. None of these substances will be released through normal contact, including transportation and manual disassembly.*

  BFRs are released and/or volatilized from products during 'normal contact' in the use and waste phase. In 2007, the Australian government released studies on PBDEs. One study involved the testing of nine indoor air samples, two outdoor air samples, nine dust samples and ten surface wipes from South East Queensland. PBDEs were detected in all air and dust samples and nine of the ten surface wipe samples. PBDEs were detected in:

  - all samples of indoor and outdoor air
    - indoor air had a range of 0.5 -179 pg/m3 for homes and 15 – 487 pg/m3 for offices
  - all dust samples with a concentration ranged from 87 – 3070 ng/g dust
  - 9 out of 10 surfaces sampled.

  The surfaces sampled represented televisions, refrigerators, stereos and DVD players. Blood samples show that human blood with the highest levels was found in young children. The report acknowledges that Australians have twice the level of PBDEs in their blood (6.7 – 18 ng g-1 lipid) as their European counterparts with the highest concentrations in children under four.

- 2.5 Impacts of recycling of BFR contaminated plastics on recyclers and Scheme targets - It is unreasonable for the Interim Standard or the future Australian Standard to allow the recycling of BFR contaminated plastics when they will soon be banned. This would send the wrong signals to recyclers. It would attract investment in worst practice, soon to be redundant infrastructure and encourage misinformed business models for new entrants while entrenching business as usual for existing recyclers.

  Allowing recycling of BFR contaminated plastics will also distort the Scheme targets. Indeed, the methodology for

	determining recycling targets needs to be cognisant that 22% - 30% of a computer is composed of (largely contaminated) plastics.11 Unless there is explicit guidance on the identification and separation of contaminated plastics in the Interim Standard and the future Australian Standard from early on, planning for the target of 80% recycling by 2020 and interim targets will be distorted. It is therefore essential for the DIIS, the Australian Standard, the Scheme KPIs, Regulations and Targets to acknowledge this issue and adjust accordingly. For this reason, the Interim Standard recycling rate of 90%, rising to 95% after 5 years, should exclude contaminated plastics. • 2.6 Treatment of BFR contaminated plastics - A core National Waste Policy Objective is: *A comprehensive nationally integrated system for the identification, classification, collection, treatment, disposal and monitoring of hazardous substances and waste that aligns with international obligations.* To reflect this objective the landfilling, incineration, recycling or export of BFR contaminated plastics should be prohibited by the DIIS. Instead, recyclers must be required to identify, separate and store BFR contaminated plastics. This could be implemented in a staged process over two years to allow current recyclers to adapt. To deal with the resulting hazardous waste, Australian destruction facilities must be established in tandem with the National Television and Computer Recycling Scheme. This responsibility should be shouldered by Federal and State Governments and may involve storage of contaminated materials for longer than 12 months. • 2.7 Classification and transport of hazardous wastes - According to international and national definitions, once televisions and computers have reached end-of-life, major portions of them (eg, leaded glass, printed circuit boards, contaminated plastics) will have become hazardous waste and should be treated as such. The classification, management, transport and storage requirements for hazardous substances are defined by the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and its technical guidelines as well as State and National requirements. These should be adhered to. In 2010, negotiations started for a mercury treaty, due to be completed in 2013, which will include further obligations on countries relating to export and trade, use, treatment, storage and disposal. • 3.1 Loopholes for landfilling - The DIIS allows far worse than best practice performance through the use of statements that provide loop-holes for unconstrained landfill including: *Recyclers shall not use landfill, energy recovery or incineration as standard practice for disposal, unless the practice can be shown to be the most environmentally sound solution…* (p.15) Here the DIIS provides no guidance or requirements on how landfill, energy recovery or incineration can be demonstrated to be the 'most environmentally sound solution', again leaving it open to misuse. As it is doubtful whether the demonstration of robust decision making and robust oversight of that decision making can be undertaken without adding

	significant costs, this statement should be deleted in favour of referencing specific requirements in the Table. Another statement from the DIIS that inappropriately allows loop-holes for recycling is: *Components and materials arising from the processing of EOL Televisions and Computers shall only go to landfill where no economically viable recycling technology is available*. (p.15) The DIIS provides no means of evaluating what 'economically viable' means. Standard practice would require a cost-benefit analysis to establish the meaning of 'economically viable'. Without explicit guidance and reporting requirements on what constitutes 'economically viable', the decision to landfill will be left to individual recyclers and PROs in commercial-in-confidence contracts. This could result in the potential disposal of any amount of materials without substantiation and without the knowledge of the consumers who are paying for it. This statement should therefore be deleted. In the Table (pp. 16-17), landfill is rightly excluded as an option in most categories however it provides inappropriate loopholes in the following case: *End of life Computers and Televisions…Not Acceptable: Landfill where components and materials are recoverable. (Row 1)* The statement could be used to justify inappropriate landfilling as there is no guidance on how 'recoverable' is to be determined. The Interim Standard should therefore instead specify what materials may be landfilled. According to current recyclers, this includes materials such as sticky labels, leather phone covers and blister packs. • 3.2 Landfilling of BFR contaminated plastics - The DIIS currently allows for the landfilling of contaminated plastics through the absence of a 'Not Acceptable' listing in Row 8 of the Table. It also notes that 'Any waste that is disposed of to landfill must be disposed of at a waste facility that is appropriately licensed under State or Local government legislation or regulations' (p.11, 4.8). As noted above, disposal of contaminated plastics to landfill is unacceptable and well below best practice. A main recommendation of the Stockholm Convention's POPs Review Committee is to reduce releases of PBDE from landfills by avoiding the landfilling of PBDE-containing materials. • 3.3 Packaging waste - The main packaging components are cardboard, polystyrene and various plastics which can all be readily be recycled. This must be a minimum requirement of the Interim Standard. Almost all consumers would have confronted a confusing set of choices and while the residential sector can perform reasonably well this is not the case for the commercial sector. Nationally there is a high level of cardboard recycling but much less so for plastic. The Interim Standard and the future Australian Standard should seek to standardise material types to maximise recyclability in Australia including application of sustainability guidelines under the Australian Packaging Covenant. • 3.4 Disposal to Landfill - The DIIS states that 'Any waste that is disposed of to landfill must be disposed of at a waste facility that is appropriately licensed under State or Local government legislation or regulations'. The Stockholm Convention's POPs Review Committee has specifically recommended against any disposal to landfill of electronic waste containing BFRs and this should be recognized within the standard. • 4. Incineration - Australia does not have incineration capacity for hazardous waste, and incineration for municipal waste

	has not been practiced since the 1970s. Community opposition to the establishment of incinerators remains strong. In assessing community priorities, WA communities rated incineration, alongside landfill, the worst practice disposal. • 4.1 Loop-holes for incineration - The DIIS inappropriately allows for well below best practice by allowing incineration. As noted above for landfill, the statement that 'Recyclers shall not use landfill, energy recovery or incineration as standard practice for disposal, unless the practice can be shown to be the most environmentally sound solution…' (p.15) leaves open the option for unconstrained amounts of incineration as there is no guidance or requirements on how incineration can be demonstrated to be the 'most environmentally sound solution'. As it is doubtful whether the demonstration of robust decision making and oversight of such decision making can be undertaken without adding significant costs, this statement should be deleted. Further, the Table contains internal contradictions on incineration. It appears that incineration for whole end-of-life televisions and computers is 'Not Acceptable' however the absence of mention of incineration as 'Not Acceptable' for individual components (except for Ink and Toner Cartridges – Row 7) leaves it unclear whether incineration is allowed or not under the DIIS. Incineration should be clearly marked as 'Not Acceptable' for all components in the Table. • 4.2 Incineration of Plastics - The DIIS Table explicitly – and inappropriately – allows the incineration of plastics (Row 8) on condition that such incineration has 'proper controls to ensure Persistent Organic Pollutants (POPs) are within regulated limits'. Australia does not have high temperature incineration for hazardous waste and is highly unlikely to have them in the future. It is also unlikely to be successful in exporting hazardous waste for final disposal, which is only allowed in exceptional circumstances under Australia's Hazardous Waste Act and only to developed countries. Attempts at exporting POPs have already resulted in political stalemate. Acknowledgement of incineration as an option under the standard would prove to be impractical and counter productive to community support for the collection, recycling and sound management of electronic waste. As noted above, best practice for BFR contaminated plastic now includes identification, separation and treatment. • 4.3 'Waste to Energy' - It is inappropriate for the DIIS to allow for 'waste to energy' technologies. 'Waste to energy' projects for electronic waste are based on the incineration of BFR contaminated plastics. They result in the same formation and release of toxic emissions of polybrominated dibenzo-p-dioxins and dibenzofurans (PBDD/DFs) as does primary incineration. They produce similar profiles in toxic ash and are viewed by many in the community as a form of greenwash. In assessing PBDD/DF releases and worker exposure, researchers listed pyrolysis for fuel and Gasification, typical of waste to energy proposal as high emitters of these toxic emissions. • 5. Pyrometallurgy and hydrometallurgy - It is unacceptable to approve pyrometallurgical and hydrometallurgical processes without stipulating a minimum recovery rate of treated materials and minimum pollutant controls. A handful of best available technology (BAT) and best environmental practice (BEP) smelters may be able to achieve close to 90% recovery but most don't, and some achieve as low as 30% recovery. Their effectiveness is impacted by numerous factors, including whether e-waste has been initially sorted by hand or machine.

	For a range of metal industries (primary and secondary iron industry, copper and aluminium smelters) PBDE and PBDD/DF releases have been reported in the literature. As there have been no investigations to fully assess the composition of the input materials, it is not possible to model the mass balances or to calculate destruction efficiencies. In dedicated tests for treatment of PBDE/BFR containing printed wire boards in smelters, PCDD/DF levels were reported but there are no data on releases of PBDE/BFRs and PBDD/DF and mixed brominated-chlorinated PXDD/DF in the public domain. In assessing PBDD/DF exposure, researchers listed Copper Smelters (PWB), Antimony Smelters, Electric Arc, and Secondary Aluminium as high emitters. We note here the Stockholm Convention's POPs RC recommendation that: "Medium-term activities should include further assessment and the production of BAT/BEP guidance by the Convention's expert bodies including consideration of PBDE and PBDD/DF releases from smelters and other thermal recovery technologies including secondary metal industries, cement kilns, and feedstock recycling technologies." • 6. Ensuring highest resource use - As noted above, the DIIS guiding principle of 'Ensuring that the highest resource value is maintained' is good in theory but not applied in practice. • 6.1 Shredding of whole computers and televisions in not acceptable - Current BAT Australian recycling achieves above 95% recovery through various levels of manual disassembly followed by mechanical processing.12, 13 By comparison, processing e-waste through a simple metal shredder can only deliver around 80% recovery, with a significant contaminated residue of hazardous waste ('shredder floc') being dumped in landfill. It is therefore inappropriate to allow lower than a 90% recovery rate (excluding contaminated plastics). • 6.2 Re-use and remanufacturing of computers for Australia - As the European Commission has recently noted, re-use provides significantly greater environmental and social benefits than recycling and has given effect to this through its proposal for a 5% re-use requirement in the Directive on Waste Electrical and Electronic Equipment (WEEE). Although the Interim Standard and the future Australian Standard are not tasked with setting this outcome, it is critical that they do not impede current re-use operations. National Waste Policy goals also clearly and repeatedly state that re-use is a desirable outcome, including: *The aims of the National Waste Policy will be to*: *avoid the generation of waste, reduce the amount of waste (including hazardous waste) for disposal, manage waste as a resource and ensure that waste treatment, disposal, recovery and* ***re-use*** *is undertaken in a safe, scientific and environmentally sound manner…(*bold added) *Objective: Support waste avoidance, reduction, recovery* ***and re-use*** *by addressing market impediments and removing red tape.* (bold added) Stated government legislation and policy is also clear in the objective to promote re-use and refurbishment, for example:

	o Tasmania: Environmental Management and Pollution Control Act,1994 o South Australia: Environment Protection Act 1993 o New South Wales: Protection of the Environment Operations Act 1997 o New South Wales: Waste Avoidance and Resource Recovery Act 2001 Policy objectives for the Television and Computer Product Stewardship Scheme which are aided by re-use and refurbishment include: o Conservation of non-renewable resources o Environmental impacts of landfill These objectives are in line with the broader objectives of the 1992 COAG endorsed National Strategy for Ecologically Sustainable Development strategy, which include: o Improve the efficiency with which resources are used o Reduce the environmental impact of waste disposal These also reflect two of the National Waste Policy's six key areas: 1. Taking responsibility - Shared responsibility for reducing the environmental, health and safety footprint of products and materials across the manufacture-supply-consumption chain and at end-of-life. and 3. Pursuing sustainability - Less waste and improved use of waste to achieve broader environmental, social and economic benefits. Re-use and refurbishment contribute to the meeting of the above objectives by conserving resources, through: - Reducing the energy required for recycling - Reducing the use of water required for recycling - Reducing the loss of materials through recycling - Reducing greenhouse gas emission and other pollutants resulting from recycling The DIIS, however, takes no position on the refurbishment or re-use of computers or computer component parts on the grounds that it only addresses 'end-of-life' equipment. This presents a risk that the DIIS and the future Australian Standard will adversely affect the potential to refurbish and re-use computer equipment by inadvertently collecting and processing these computers. This would result in the significant loss of embodied energy, embodied greenhouse emissions and other pollutants, materials and water resources. It is therefore necessary that the DIIS and the Australian Standard do not in any

	way impede the potential for re-use. As Hyder Consulting recently pointed out in relation to the Scheme's impact on not-for-profit (NFP) refurbishers: *The federal government needs to acknowledge that the participation of NFP agencies in e-waste management, in particular in the refurbishment of computers, leads to a better environmental outcome and has immense social benefits. To that end, the federal government needs to ensure that the product stewardship scheme does not create the perverse outcome of a reduction in the refurbishment of equipment, or a diminution in the involvement of NFP agencies in e-waste management.* A primary problem with the DIIS in this respect is that it presents no process by which to determine whether computers are in fact at 'end-of-life'. While consumers may be the first decision makers about whether they no longer have a use for a product, they are not necessarily in the best position to determine whether or not it is actually at 'end-of-life'. They should therefore not be the final decision makers on whether a computer is 'end-of-life' or not. A further problem with the DIIS is that it provides no guidance on how collectors should best handle computers that may potentially be re-used or refurbished. One option would be for the DIIS to require collectors to store equipment in a way that does not diminish the potential for refurbishment or re-use of computers, and to allow NFP operators access to these sites. • 6.3 Re-use for export - The export of used electronic goods has gained considerable attention from governments of developing countries in recent years. E-waste is the fastest growing waste stream in the world and is estimated to soon reach 50 million tons per year. E-waste was identified as an emerging issue for the International Conference on Chemical Management (ICCM2). In 2009-2010, African countries supported by the Asia Pacific and Central and Eastern European countries called on the global community to address the export of near end of life products, which in reality quickly become toxic wastes, which they are ill equipped to handle. While the domestic re-use of electronic goods may be a useful management option in some circumstances, export of these goods is not environmentally sound and should cease. • 6.4 Separation of leaded and unleaded glass - As it is current best practice in Australia, separation of leaded and unleaded glass should become a requirement of the Interim Standard in order to operationalise the principle of 'Ensuring that the highest resource value is maintained'. • 6.5 Glass to glass recycling for CRTs - Glass to glass recycling for CRTs is another clear way in which the Interim Standard could operationalise the principle of 'Ensuring that the highest resource value is maintained'. To do this lead smelting of CRTs should be 'Not Acceptable' process. Recycling through lead smelting currently achieves around 12% recovery. This is in contrast to processes which recycle CRTs into either new CRTs or glass for other uses that achieve an 84% recycling rate. It is clear that glass to glass recycling delivers significantly greater environmental benefit and should become a minimum requirement of the Interim Standard. • 7. Targets and the Material Processing and End Use Acceptability Table (p.16-17) - The materials based approach taken provides a solid conceptual foundation for the recycling standard. However, to ensure recycler compliance and avoid the unnecessary downscaling of resources, an overall initial minimum recovery rate of 90% of received materials, excluding

contaminated plastics and rising to 95% after 5 years, must also be applied. The modified Table on the following page further clarifies the issues raised above and our recommendations are shown as track changes.

Product / Material	Minimum Acceptable Application	Acceptable Process	Not Acceptable
End of Life Computers and Televisions	90% recovery rate, rising to 95% after 5 years. Material recovery Metals recovery	Manual dismantling and sorting into major material categories Mechanical processing for dismantling and/or material separation with required dust collection & operator protection	Landfill Incineration Shredding of whole computers or televisions Dismantling using prison labour (note 1) Export to non OECD countries without the appropriate permit under the Hazardous Waste (Regulation of Exports and Imports) Act
CRT Tubes, Leaded Plasma Display Glass, and Other Leaded Glass	Glass product manufacturing[14] Separation of un-leaded and leaded glass[15]	Mechanical cutting and crushing with required dust collection & operator protection.	Landfill Incineration Lead smelting Use as sand substitute in smelter fluxing[16] Manual processing using prison labour (note 1) Export to non OECD countries without the appropriate permit under the Hazardous Waste (Regulation of Exports and

					Imports) Act
		Circuit Boards	Separation (manual or mechanical) Metal recovery Smelting	Manual processing Mechanical processing with dust collection and operator protection. Smelting complete boards	Landfill Incineration Manual processing using prison labour (note 1) Export to non OECD countries without the appropriate permit under the Hazardous Waste (Regulation of Exports and Imports) Act
		Cable and Wires	Metal recovery Smelting	Manual or mechanical processing Smelting	Landfill Incineration
		Batteries	Extract from whole units Metal recovery	Manual or mechanical processing Smelting	Landfill Incineration Export to non OECD countries without the appropriate permit under the Hazardous Waste (Regulation of Exports and Imports) Act
		Mercury Containing Lamps and Switches	Mercury recovery Extract from whole units	Mechanical processing Mercury distillation	Landfill Incineration Export to non OECD countries without the appropriate permit under the Hazardous Waste (Regulation of Exports and Imports) Act

		BFR Contaminated Ink and Toner Cartridges (Note 2)	Extract from whole units Remanufacture Materials recovery for a period of no more than 2 years from the date of approval of this Standard	Identification, separation and storage Manual or mechanical processing only with proven extraction of BFRs	Recycling after 2 years from the date of approval of this Standard Export to non OECD countries without the appropriate permit under the Hazardous Waste (Regulation of Exports and Imports) Act Hazardous waste incineration Landfill Incineration	
		BFR Contaminated Plastics	Plastic recovery for a period of no more than 2 years from the date of approval of this Standard Depolymerization without fully proven and documented reduction of BFR content Pelletizing without fully proven and documented reduction of BFR content	Identification, separation and storage Manual or mechanical processing only with proven extraction of BFRs	Recycling after 2 years from the date of approval of this Standard Landfilling Incineration Export to non OECD countries without the appropriate permit under the Hazardous Waste (Regulation of Exports and Imports) Act	
		Non-contaminated plastics	Plastic recovery Depolymerization Pelletizing	Manual or mechanical processing Waste to energy incineration	Landfilling Incineration	
		Ferrous and Non-ferrous Metals	Metal recovery[17]	Manual or mechanical processing Foundry	Landfill	
		Packaging	Material Recovery Recovery of cardboard, plastics and polystyrene	Mechanical or chemical processing	Landfill where materials are recoverable	

Recycler	**VES** - acknowledges the interim industry standard as largely appropriate for its purpose. With caveats noted below, it puts appropriate emphasis on driving performance, as well as ensuring required environmental, and occupational health and safety aspects are met. **SITA** - Yes, for an Interim Industry Standard. **Mai-Wel E-Cycling Services** - With the appropriate mix of education, promotion, accessibility & community involvement it is possible to achieve very high recycling rates in a relatively short period. For instance • Free collection and/or drop off days • Free collection points at Council waste management facilities • Online and print advertising • Not for profit Disability Service Providers managing local and comprehensive disassembly • 24 full time jobs (20 of which are people with a disability) • Over 385 tonnes recycled in first 18 months of operation.
Question 2: Are the required occupational health and safety and environmental performance appropriately incorporated, including as defined by Commonwealth, state and territory laws, including the Hazardous Waste (Regulation of Exports and Imports) Act 1989 (Cth), and as identified in relevant international standards?	
Industry Association	**AMTA** - It is comprehensive – there does not appear to be any gaps, however, the reality is that until the sites are audited it is difficult to confirm if they comply with all performance standards and regulations.
Local Government	**Leichhardt Council** - As above. There is also a gap between current substances used in some electronic equipment and new chemicals added under the Stockholm convention. If this is not addressed then OH & S / environmental performance would not be in accordance with relevant international standards.
NGO	**CRN** - The concern is that the definition within the document of a recycler specifies this role being involved in the reprocessing of materials. A pre-processor / dismantler simply takes a product apart into component parts without disturbing the material; this has implementation around the level of OH&S controls; i.e. air monitoring, risk assessments and the control measures to ensure a safe workplace. The clear definition of a pre-processor / dismantler should be included outlining the tasks involved within this role. **TEC/NTN** - No. The DIIS requires 'Monitoring of worker exposure or air emissions if potential exposure above the safe exposure limits or potential for emissions to atmosphere have been identified as a potential risk.' (p. 9, 4.1.d) This is well below standards, as it is only through adequate monitoring that exposures will be identified. All recycling facilities and workers must therefore be subject

	to exposure monitoring.
Recycler	**VES** -Yes. In the context of Australian provisions, the interim industry standard puts appropriate emphases with regard to OHS and environmental performance aspects on to different segments of the EOL TV and computer supply chain. VES is not in a position to comment on international provisions. **Recovery TAS** - They are sufficient **SITA** - Yes, for an Interim Industry Standard. **Mai-Wel E-Cycling Services** - A key understanding needs to be achieved that disassembly at local/regional level is critical to reducing logistical costs and environmental impact. However, disassembly and the sale of commodity components is very different to the complete on-site recycling of items. Lower hazards, infrastructure and environmental impacts can be achieved by utilising, local/regional disassembly in conjunction with the downstream recyclers, including those that send components for off-shore processing. Importantly this demonstrates that local disassembly such as that provided by Mai-Wel E-Cycling Services (in partnership with Hunter Resource Recovery) can work in parallel to and add value to downstream recyclers.
Question 3: Does the interim industry standard provide for adequate auditing and validation requirements in any contracts between the industry-led Scheme and service providers? Do these arrangements align with international best practice?	
Industry Association	**AMTA** - Yes it sets a good framework for the PRO to audit and validate performance by a collector, transporter and Recycler. They may choose to go into more detail in some areas – eg storage bins used
Local Government	**Leichhardt Council** - Whilst there are requirements in place for reporting processes within the Interim Standard, it is not clear who is actually responsible for tracking and how this information will be publicly reported, so the public has confidence that materials are being appropriately handled. Matching mass inputs to mass outputs would be a challenging task Without physical audits there is no accountability apart from on paper, between processors down the chain. Clause 7.7 refers to 'periodic auditing' but what % of locations are going to be randomly audited who by and how often and what resources are available to physically and financially fund this?
NGO	**CRN** - The DIIS needs to provide further details of the "auditing regime" for collection locations. The DIIS requests "periodic" second and third party audits of downstream recyclers, what does the DIIS consider "periodic" once a year, twice a year etc **TEC/NTN** - No. The DIIS adopts poor standards for the tracking of materials from first recyclers to their final destination. This is well below WEEE requirements that enable proper understanding of whether the Scheme is meeting its targets. Such data is necessary to ensure that the Scheme is delivering on its goals and to maintain consumer confidence that the Scheme is not 'greenwash'. It is therefore essential that all materials, not just 'substances of concern' are tracked – and auditable - to their final

	destination. In addition, the DIIS states that 'If relevant information on the hazardous nature of the material or components submitted for recycling is not known, information should be sought from the manufacturer directly or from the National Television and Computer Product Stewardship Program'. (p. 9, 3) Information should not be limited to the PRO but be sought from research and international bodies such as the POPs Review Committee reports, UNEP documentation, NGOs, etc.
Recycler	**VES** - While it is understood what records and data needs to be collected and retained, it is unclear from the interim industry standard what the specific auditing and validation requirements will be. This should be clarified to increase the rigour of the interim standard. **Recovery TAS** - The standards are sufficient, how ever emphasis should be placed on ensuring existing 2nd life outcomes remain and can continue to grow with out undue hindrance. **SITA** - the inclusion of date of destruction in the reporting would add significantly to the data recorded and strengthen payment structures whilst enforcing recycling and avoiding stockpiling. Refer to the comment relating to Page 18 / 7.5 Traceability. This is based on experience and advice from SITA's WEEE facility in France. SITA Australia would be happy to discuss this further if needed. **Mai-Wel E-Cycling Services** - Overall, this is correct. However it must be noted once again that the system should encourage and support local delivery of service by local organisations, rather than allow large corporations to dominate, without regard for local communities and organisations. Alignment with ISO 14001 should ensure the highest standards are maintained.
Question 4: Is the standard appropriate for an Australian context, including consideration of regional and remote areas and demographic spread?	
Industry Association	**AMTA** - Yes
Local Government	**Leichhardt Council** - Standards to ensure OH & S and environmental obligations are met should be the same in remote locations, as for other locations. The TV & computer products will contain the same hazardous materials and must be fully funded by the industry for their management. **WALGA** - As the standard does not appear to specifically mention regional and remote areas. The considerations discussed in the Consultation Report Part 1 appear to focus on the storage difficulties for the regional areas. With regard to the difficulties the non-metro area will have these will probably be related to longer transport distances and consequently higher likelihood of product breakage. Depending on the extent of the scheme application, the non-metro areas collection facilities will also have lower staffing levels and consequent greater difficulty in taking part in an administratively complex scheme.
NGO	**CRN** - • The DIIS needs to acknowledge that all communities create waste, in this case e-waste, and that they have a responsibility to dispose of it in a responsible manner. Waste is a multimillion dollar business so for the local community to take

	responsibility for its e-waste a case should be stated on how it can benefit from such an initiative. Such initiatives create local jobs and add to the economic development of an area. There are many such viable projects around Australia where a small town of about 8,000 to 10,000 population have created their own community solution to reuse. • The DIIS should demonstrate such examples rather than take it for granted that large volumes of e-waste will be transported out of Australia's regional areas to be dismantled in capital cities. It is a cost on the environment to transport these materials in bulk rather than dismantling them at the local source. • The DIIS needs to be encouraging of reuse rather than just recycle as each community needs to extract the greatest benefit out of disused product as they would be missing out on possible economic development.
Recycler	**VES** - acknowledges the interim industry standard as largely appropriate for its purpose. With caveats noted below, it puts appropriate emphasis on driving performance, as well as ensuring required environmental, and occupational health and safety aspects are met. **Recovery TAS** - no, eWaste to meet the terms of the Basel convention must be managed in country and preferably regionally. **SITA** - Until the digital switchover is completed and the initial spike in e-waste is realised for regional and remote areas, it is difficult to forecast and understand if this standard is appropriate. **Mai-Wel E-Cycling Services** - A city, regional and remote context is appropriate. Communities should be encourage and supported to establish a locally delivered program. Here in the Hunter, our organisation n partnership with Hunter Resource Recovery (owned by Maitland, Cessnock and Lake Macquarie Councils), currently service six Local Government Areas with room for expansion into 3 more in the Hunter Region. We are also exploring opportunities in the New England, Central Coast and Mid North Coast due to our central location.
Question 5: Are Australia's international obligations met, including requirements under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the Stockholm Convention on Persistent Organic Pollutants?	
Industry Association	**AMTA** - They have been included in the standard as something that has to be complied with by the various stakeholders. As to whether the collectors, transporters and recyclers meet these requirements will depend on the audits/site visits.
Local Government	**Leichhardt Council** - No. There is no acceptable way of separating Brominated Flame Retardants (BFR) and therefore no way of carrying out recycling in an 'environmentally sound manner'. This is highlighted in Clause 7.4 that states that practices for disposal can include incineration in some circumstances.
NGO	**CRN** - The Basel convention is mentioned once in the document in a section discussing material separation. This should have a higher profile in the document clearly identifying the objective of the Basel Convention on Transboundary movements of e-waste.

	TEC/NTN - • As noted above, the view expressed by some that the Interim Standard cannot take account of current international agreements because Australia has not yet ratified the 9 new POPs is a moot argument. Australia will ratify the 9 new POPs and will take account of the work of the POPs Review Committee. For the Australian industry standard to be accepted by the community it must be seen as progressive, best practice and in line with the rest of the developed world. Anything less risks community scepticism and loss of confidence in recycling in Australia. • Article 6 of the Stockholm Convention, of which Australia is a ratifying party, requires ratifying countries to: a) Develop and implement appropriate strategies for identifying stockpiles, products and articles in use that contain or are contaminated with POPs; b) Manage stockpiles and wastes in an environmentally sound manner; c) Dispose of waste so that the POPs content is destroyed or irreversibly transformed; d) Not permit the recycling, recovery, reclamation, direct reuse or alternative use of the POPs; e) Endeavour to develop strategies for identifying contaminated sites and perform eventual remediation in an environmentally sound manner. • Further, Strategy 13 of the National Waste Policy states that: *The Australian Government…will adopt a system that aligns with international approaches, to reduce hazardous substances in products and articles sold in Australia that present a potential risk during and at end of life to human health, safety or the environment.* (p.14) • Two BFRs (the commercial mixtures of brominated diphenyl ethers, Penta and OctaBDE are referred to as POP-BDEs), along with 8 other new persistent organic pollutants (POPs), were recently banned under the Stockholm Convention. Australia supported the listing of these new POPs and is likely to ratify the changes in the near future. While a temporary exemption allows the recycling of BFRs, this is likely to come to an abrupt end within two years as the POPs Review Committee has recently recommended that recycling of articles containing listed POP-BDEs should only be performed if the articles are first treated and the POP-BDE are removed. Otherwise recycling of articles containing POP-BDE should be stopped as soon as possible. It is therefore unacceptable for the recycling of BFRs to be knowingly sanctioned by the DIIS under these circumstances. • International best practice for BFR contaminated plastics from e-waste now includes identification and separation. Standard commercial GC/MS analysis of PBDE in plastic and other materials is widely available in developed countries. This is largely because of the demand that has arisen over the past few years due to the requirements of Restriction of Hazardous Substances (RoHS) compliance and other national laws. Currently, the practical method for screening and separating PBDE-containing materials is the separation of all BFR-containing materials by online screening of the bromine

	content.
Recycler	**Recovery TAS** - no. Exportation continues of material that can be effectively managed in country and regionally in Australia. **Eco Products Agency** (plastics recycler) - • Under the draft interim standard, possible future requirements under the Stockholm Convention on Persistent Organic Pollutants are not met. • This relates specifically to the recent listing of certain polybrominated diphenyl ethers (PBDEs) in Annex A, and perfluorooctane sulfonate (PFOS) in Annex B of the Stockholm Convention. PBDEs have been extensively used in TV and computer casings, while PFOS is used in some electronic components. • As stated in Table 1, Note 3 (pg 17), the Federal Government is involved in addressing the issue of the policy response needed, and the future result of deliberations is not known. • Therefore, while the interim standard might reasonably defer updating advice on the treatment of components containing PBDEs until the Federal Government has completed its assessments, the interim draft should already highlight the likely impact of changes on the treatment of waste plastics from casings and other components, including export. **SITA** - Yes, however, it is believed that illegal exporting of e-waste is still occurring and the government should be encouraged to publish the information on the individuals and/or companies charged with illegally exporting. Unless this happens, people and/or companies will continue to do it. **Mai-Wel E-Cycling Services** - All recyclers are required to meet these and the draft scheme reflects this principle. ISO 14001 encompasses the requirements under the Basel Convention
Question 6: Are costs associated with implementing the interim industry standard, including estimated cost burdens identified? Including; *a. the cost to the television and computer industry or a third party to certify recyclers or other parties involved in the collection, handling, storage, transport and treatment of the items; and* *b. costs to recyclers or other parties to comply with the industry interim guidelines.*	
Industry Association	**AMTA** - Not clearly, but it is implied, in part it comes back to good commercial practise by individual businesses. I don't believe what is being asked is a particular burden to the collectors, transporters and recyclers or the PRO's as they will need to audit their vendors anyway as its just good practice.
Local Government	**Leichhardt Council** - No. It is unclear in the Standard and the Scheme of which part of the whole process is being managed and funded by the industry? Who actually is funding the various activities required from collection, transporting and so on down the processing line? There are a plethora of costs involved from the start of the process. At the Collection Point these include eg risk

	assessments; emergency response; data reporting; training and auditing, in addition to activities of traffic management, signage, advertising and administration. What is the proposal to cover these costs and other costs downstream, particularly for smaller / social enterprises? **WALGA** - The issues Local Government raised regarding cost of collection and ability to charge for e-waste collection have clearly been considered and some clarification provided, however the issue is not resolved and will need to be incorporated into the overall scheme design.
NGO	**CRN** - • The costs of implementing the DIIS for community recyclers and charitable organisations will be great, these organisations do not have large financial budgets. This will cause many community recyclers and charitable organisations to be forced out of the market if the rigor of the standard is not tailored to meet the operational requirements of these organisations. This does not attempt to lower OH&S standards; the task performed must be within that accepted by the OH&S standards. • Even if there are some community recyclers and charitable organisations that are able to get support to financially meet the costs associated with implementing the DIIS there is no guarantee that they will be awarded contracts under the PSO scheme therefore making it a very risky investment. • The cost of alternative sites in the event of Disaster Recovery would be a major expense for community recyclers and charitable organisations. A better solution is to provide better logistics planning in the event of a disaster. i.e. don't accept any further material. Meeting the cost to minimise carbon emissions are unclear. Which technologies are carbon efficient and at what cost? **TEC/NTN** - the cost to the television and computer industry or a third party to certify recyclers or other parties involved in the collection, handling, storage, transport and treatment of the items; and costs to recyclers or other parties to comply with the industry interim guidelines.
Recycler	**VES** - no, costs burdens associated with implementing the interim industry standard are not identified. VES understands that an independent consultancy is currently reviewing this aspect. It would in this regard be worthwhile to assess and balance the benefits of compliance to the standard (presumably environmental best practice) against compliance costs. **Recovery TAS** - yes, smaller emerging organisations, often highly innovative must be consulted extensively as the means to influence policy are not as great as larger companies. This will reduce competition in Australia. **SITA** - In some cases, yes, but in some cases, we don't believe so. • Computer & TV Industry – No, volumes have been estimated, but are not fully known. • Certification of recyclers – Yes, this can be estimated. • Collection, handling, storage, transport and treatment of the items – No. Again, volumes are only estimated and the extent

	to how much is dropped off in the initial spike of the scheme is not fully known. Approved sites under the Scheme will more than likely need to undergo some modifications to cater for the safety of the general public in the drop-off areas. Consolidation and storage of e-waste may require additional costs to establish. • Recyclers complying - This should be relatively low cost to conforming with the industry interim standard, however, additional reporting and auditing requirements may incur some associated costs. **Mai-Wel E-Cycling Services** - No clear direction on business/industry generating waste has been given in the standard. A clear understanding of who and what organisations involved would be paid for has not been identified. Ownership of commodities and the associated responsibilities are not clear. Costs may be significantly higher than necessary for compliance/reporting requiring an input breakdown by type (TV, VCR, Computer, etc) and or manufacturer.
Additional Issues/Concerns	
Local Government	**Leichhardt Council** – • Pgs 9-12 - Collection Points - Where are the collection points to date and what organisations are providing these?If these are being provided by local governments, are all of the individual collection points aware of the Interim Standards comprehensive set of requirements and responsibilities and who will be funding these? Further to the above a consistent set of materials needs to be developed by the industry for any non-industry participants to ensure consistency across the Scheme in all locations and compliance with the Standards, including training, risk management and template reporting documents for management of a 'collection' facility. Are there additional requirements by state and territory jurisdictions in relation to the Standard in addition to the Federal Government Scheme and if so what are these? • Pg 12 - Fees – the community has the right to know that the collection, transporting, reprocessing/recycling has a large cost to those along the product stewardship chain, that this is not FREE and that the consumer is paying. Otherwise there is no understanding of the full costs involved in management of waste, particularly hazardous waste and will result in overall waste increases, as demonstrated in general overall waste increases, despite recycling. Related to this is the exclusion of reuse or refurbishment within the Interim Standard and Rollout with no information on how upgrading, reuse, refurbishment will be managed and by who and how they fit into the Scheme. Once recycling collection points are set up there will be little incentive to do anything else bar recycle. • Pg 12 - Social enterprise - what mechanisms are there to ensure social enterprises can meet the Interim Standards – are they going to be competitive? As noted in the response letter to the Australian Information Industry Association from Ramsay Moodie there are issues relating to the preclusion of smaller or start up / existing social enterprises being able to meet the standards and be competitive. The standard needs to include options for this type of enterprise and how they can participate and be funded. • Pg 11 - Duplication of reporting - how does the Interim Standard reporting requirements fit with existing reporting requirements at Federal and State government level so that there is not duplication and inefficiencies with organisations

	having to record and monitor additional data? Working on a 'template (s)' for this purpose with government (s) would be useful to ensure consistency and avoid overlaps. **NSW LGSA** – • The Associations appreciate the opportunity to provide comments and input to the Draft Interim Industry Standard for the Collection, Transport and Recycling of End of Life (EOL) Televisions and Computers • The Associations' comments relate mainly to the requirements which will apply to collection facilities, as this will be the main area of involvement for councils wishing to engage in the scheme. It should be noted however that these standards will equally apply to community groups and retailers who participate in the scheme, and there is likely to be a great deal of variety in the degree of "upskilling" and upgrading which is necessary. • For collection facilities (page 12), the standards themselves, while appropriate, are somewhat "open ended". What for example, does "clean and tidy, secure and free from hazards" mean? What does "a warning stating that it is the responsibility of the equipment owner to remove of any confidential or private data before the equipment is left at the collection location" look like? These requirements are open to interpretation. • In order to ensure some level of consistency and to ensure that the Program can have sufficient geographical coverage, particularly in rural and regional communities, the following additional principles are being proposed: • Page 8: Additional Guiding Principles: o Where existing, non-industry facilities which are proposed to be used for collection of e-waste require upgrading or modification to meet the standards, funding can be made available from the National Television and Computer Product Stewardship Program (the Program) to facilitate those upgrades / modifications. Where personnel training for non-industry participants is required in order to meet the standards (to meet OH&S requirements, Risk Management requirements or correct handling procedures), funding can also be made available from the Program for this purpose. Such funding will be subject to negotiation and agreement between the Program and the non-industry participant, and will be provided on an "at cost" basis. o The Program will develop generic guidance materials for use by non-industry participants to assist in the preparation of: Personnel training programs including facility management Collection facility design and construction guidelines including signage OH&S procedures Environmental Compliance Risk Management Systems

	Reporting / documentation Emergency response Other matters as are considered appropriate or necessary • As a general comment, the Draft Interim Standards seem to reflect an attitude that once the scheme is on offer, potential collection facilities will simply come forward seeking to be established. While this may in fact happen, the Program Managers will find themselves dealing with a wide variety of levels of expertise, suitability of sites etc. • Recent experience with the Australian Government's Roof Insulation Rebate scheme has, however, demonstrated that a much more proactive approach is needed to ensure that participants (be they councils, community groups, retailers etc), are able to comply with standards. Simply "setting the standards" and leaving it to participants to comply is not enough. • Aspects such as training programs, consistent signage templates, infrastructure upgrades, community advertising (through website or similar) are all better provided and funded by the scheme. It is a worthwhile up-front investment to ensure that the scheme operates efficiently and consistently across Australia. • The DrumMuster program which operates nationally to recover farm chemical containers has already navigated this path, and found that it was overwhelmingly beneficial to invest "up front" in ensuring that training, facilities and signage are all of a consistent standard. Managing and funding these centrally has saved a great deal of time and money because individual monitoring of compliance is not necessary. • The television and computer industry are absorbing the cost of running the recycling scheme into the current cost of new products, without any discrete or identified levy on the consumer (as operates in DrumMuster, the waste oil levy and the tyre industry). It is clear (and entirely understandable) that in light of this, they would seek to minimize the financial impact of delivering the scheme on consumers. Nevertheless, in the Associations' view, they are leaving far too much to other stakeholders to sort out (especially at the pre-collection phase), without sufficient guidance or hands-on management. • In the Associations' view, the industry should be taking a much more proactive role and greater financial responsibility for ensuring the quality and effectiveness of the 'pre-collection' phase of the program. Councils are well placed to assist and participate in the program, but there is a clear need for consistency, ongoing quality control and maintenance of standards of the program. There are "up front" and ongoing costs associated with this. These are clearly the responsibility of the industry. • The Associations re-state their view that a document with standardized "terms of engagement" for councils wishing to participate in the program, is advisable. It will result in a more effective, efficient, safer and ultimately more cost-effective program. **WALGA** - • General Requirements –

	○ Risk Management - As was previously identified the requirements for the collection locations, transporters and recyclers will vary in terms of risk management and it is potentially confusing to have all of the risk management issues together. Suggested amendment: *If the different risk management requirements of collection locations, transporters and recyclers are not going to be separated out it is suggested that it be clarified that* *a) not all requirements will apply to collection locations, transporters and recyclers; and* *b) Note that some collection locations, such as Local Government collection locations, are likely to have risk management practices in place already. These will be related to their existing operations, as landfills, transfer stations etc. Therefore they will not need new risk management plans.* ○ Reporting - Similar to Risk Management the inclusion of collection locations and recyclers in this section is still slightly confusing due to the inclusion of both collection locations and recyclers. ○ Suggested amendment: *Separate out what are the reporting requirement for collection locations (e.g. tonnes collected) from those of recyclers.* • Definitions – ○ Collection Location/Facility - The definition is supported, however as comment has been made in the draft Interim Industry Standard about the 'designated' collection points (pg 12) and that contracts will be established with Collection Locations (pg 11), it may be useful to add to the definition that these are actually accredited/authorised sites with specific requirements associated with their operation. ○ Waste Hierarchy (pg 26)– see previous comments on this definition *As all the States have different legislation / different definitions of the Waste Hierarchy would it be possible to either use a consolidated definition or an international one?* For example the WA Waste Avoidance and Resource Recovery Act defines avoidance as "avoidance of unnecessary resource consumption". • Check list for collection locations - Supportive of this approach to minimise the administrative burden on collection locations. Specific comments on the check list as follows: ○ Storage - 'Are there spillage collection facilities for all uncovered storage areas' – as it is seems the intent that the products are not stored in uncovered areas, a change in wording to indicate that this is not a preferred option would be advisable. ○ 'Are there facilities to ensure that the EOL televisions and computers are not mixed with other types of waste' – as previously indicated Local Government is currently collecting a range of end-of-life electronic goods. It is highly

	likely that these goods will be mixed with TV's and Computers on their way to the recycler. At that point the recycler will segregate the materials and costs will be apportions according to the arrangements with the PRO and Local Government. This is currently in operation as the WA State Government is providing some funding to Local Government for only the TV's and Computers collected.
NGO	**CRN** - • 7.5 Traceability - Transparency systems need to be standardised with some level of uniformity. The reports are part of the administrative process and overhead costs of maintaining the level of data required in tracking should be efficient and cost effective. Software systems that provide user access for transparency reporting between recyclers in the recycling chain, need to meet some basic common requirements. The DIIS should specify minimum recovery and recycling rates. • 6.2 Export Transport Requirements - Shouldn't the DIIS be restricting the export of e-waste given that it has the potential to be dumped in third world countries by unscrupulous operators? There are some components / materials that need to be processed offshore as Australia doesn't have the technology. The DIIS should provide more detailed information around what components / materials are acceptable for export and seek to ensure that as much as possible is processed on Australian shores rather than give an open license to export whole items that could be processed here. The DIIS needs to ensure that exporting is restricted / controlled to avoid the National Program coming into disrepute which would undermine the communities' confidence in the National Program
Recycler	**Recovery TAS** - there are emergent technologies that once delivered to market will ensure Australia's ability to deliver in country. It is important to ensure the standard recognises that change will occur in the production management and post consumer life of product. **Eco Products Agency** - • Section 3, "Guiding Principles" states: '4. Decisions regarding treatment of EOL Televisions and Computers shall be informed by the waste management hierarchy and the principles of ecologically sustainable development including: o Ensuring that the highest resource value is maintained; o Carbon emissions are minimized; and o Landfill is a last-choice destination only – all other options must be exhausted before disposition to landfill.' From a life cycle perspective the carbon emissions associated with EOL treatment of TVs and computers are small in comparison to the carbon emissions due to the production and use of the items. The primary environmental problem of unsound EOL waste management of the items under discussion is dispersal of heavy metals and persistent organic pollutants into the environment. We suggest that the guiding principle 4, dot point 2 should be along the lines of "emissions of pollutants to soil, air and

	water are minimized" • There is some inconsistency between Guiding Principle 4 and recyclers obligations in Clause 7.4. Guiding Principle 4 states 'landfill is a last-choice destination only-all other options must be exhausted before disposition to landfill'. Clause 7.4 requires assessment of options according to Guiding Principle 4, but then indicates that landfill is acceptable if it can be shown to be the most environmentally sound solution. It goes on to indicate that landfill of materials is acceptable if there is no economically viable recycling technology available. We recommend that Clause 7.4 makes clear that landfilling of materials is acceptable only if it is shown to be environmentally sound (against stated criteria or guidance) and there is no economically viable recycling technology or other disposal option available. • Clause 7.4 will need to be re-visited by an expert committee in the future to clarify: o how 'environmental soundness' will be assessed o how a 'lack of economically viable recycling processes' will be confirmed • Table 1 lists several acceptable and unacceptable options for recycling and disposal of plastics from TVs and computers. However, it is silent on the two currently most likely disposal methods: landfill and export to non-OECD countries. We recommend that Table 1 includes landfill and export options to clarify whether these are acceptable or unacceptable. This may need to be qualified as an interim measure subject to technical reviews. There is the difficulty that "Plastics" consists of a range of materials, some containing brominated flame retardants (BFRs) or other POPs and others that do not. Plastics containing BFRs are already classified as hazardous under Hazardous Waste (Regulation of Exports and Imports) Act and exporting to non-OECD countries for the purpose of recycling and/or disposal without the appropriate permit should be "Not Acceptable". Given the likely implementation of additional requirements due to the additional POPs added to the Stockholm Convention, we recommend that Table 1 should split Plastics that contain regulated POPs, and those that do not, allowing for Acceptable Processes and Not Acceptable Processes to be set with more clarity. As a pre-cautionary principle, when testing is not feasible for identification of additives, that best practice should be that plastics from TVs and computers be treated as if containing regulated POPs and handled accordingly. **SITA** – • 4.1 Risk Management - Collection Locations, transporters and Recyclers shall have conducted a risk assessment to identify health, safety and environmental (HSE) hazards and risks associated with the products and activities included in the operation and have effective processes in place to mitigate the risks in accordance with the Health and Safety Hierarchy of Control and the Waste Hierarchy. We suggest that under this scheme, these parties should be given a timeframe in which to conduct this risk assessment (ie within first 1 month or as part of application to become collection location, transporter and recycler) and also a frequency for ongoing risk assessments to be conducted and reported.

	• 4.6 Reporting - b. The quantity and origin of EOL Televisions and Computers collected through the National Television and Computer Product Stewardship Program and also quantities collected through processes not connected to the National Program such as manufacturer-run recycling programs or direct contracts with end users or other parties. The amount shall be reported in units or weight as prescribed in the contract with the Product Stewardship Organisation. We require clarification on the definition of 'origin' for reporting – is it collection point, brand of item, consumer drop-off vs other collection? • 4.6 Reporting - c. The amount of each category of resource recovered from recycling processes (if applicable) and any waste consigned to disposal. We require clarification on the measurement required for 'any waste consigned to disposal' – by weight? • 4.8 Disposal to Landfill - Any waste that is disposed of to landfill must be disposed of at a waste facility that is appropriately licensed under State or Local government legislation or regulations. Will this 'disposal to landfill' be reported? If yes, how? By weight? With details of the waste being disposed? • 5.2 Signage - Clear signage shall be provided including: a. instructions to the public b. access times c. details of equipment that is/isn't included in the collection; and d. a warning stating that it is the responsibility of the equipment owner to remove of any confidential or private data before the equipment is left at the collection location. We suggest that it is specified in this document that 'Clear signage shall be provided by the site occupant including' otherwise the expectation might be that signage will be provided by the Scheme. We also suggest that 'Signage guidelines' are developed by the Scheme / government for recommended wording of A to D points listed above; correct use of Scheme 'logo' & confirmation as approved Collection Location under Scheme. • 5.3 Storage - Areas used for the receipt of EOL Televisions and Computers shall be a clearly marked and segregated from other activities. There was discussion in the Stakeholder groups that Televisions and Computers may need to be separated at Collection Locations. Clarification requested as to whether this is required. We understand that this point addresses that the products under the Scheme require segregation from other waste types being collected at same site. • 6.2 Export Transport Requirements - In order to move the waste from its "location" to the destination Port, the exporter must use a transporter that is licensed under the relevant Road and Rail Transport Acts. We suggest that this paragraph be changed to: *In order to move the waste from its "location" to the destination Port, the exporter must adhere to Domestic Transport Requirements stated in 6.1.*

	Similarly, the words 'Road and Rail Transport Acts' should be added into the wording in 6.1 Domestic Transport Requirements. • 7. Requirements for Recyclers - Have exceptions to the Draft Standard been considered in the event of a new technology / processing capability being introduced and established in Australia – before the Standard is implemented? • 7. Requirements for Recyclers o Table 1 o Packaging o Mechanical or chemical processing Under Acceptable Process, we suggest it should be recycling rather than processing. For plastics packaging, we suggest adding 'Pelletising' • 7.5 Traceability - We suggest that under Traceability, there is an addition of text: *"Inclusive of date of destruction or each batch / item delivered from collection to recycler for processing".* Dates of destruction could trigger the payment for recycling and avoid recyclers being paid while e-waste being stockpiled and not recycled. • Definitions - Definitions are listed towards the back of the document, and with the exception of 'Definitions' listed in the table of contents, there is no reference to the definitions available. We suggest that the first use of each defined word also includes: (Refer to Definitions) - For example, Substances of Concern (Refer to Definitions) • 8.1 Accredited Certification Body - An organisation that conducts conformity assessments and third party certification of organizations against designated management system standards in the fields of quality, environment, occupational health and safety etc in accordance with the requirements of ISO/IEC 17021 as confirmed and accredited by a national accreditation body which is a member of the International Accreditation Forum (IAF). Audits are impartial and conducted by competent professional auditors, meeting international guidelines for management systems auditing as specified in ISO 9011. We query if ISO 9011 should be ISO 9001? • 8.4 Downstream Processor (6th bullet point) - Any other contracted party that handles, processes or disposes of materials on behalf of the first recycler. It was discussed in the Industry Consultation Workshop to change the word materials here to componentry. We agree as it reflects the definitions. • 8.10 Computers - This should be moved back to be 8.4 not 8.10 and therefore, alphabetically listed. This definition was previously IT products, so has retained that alphabetical position. • 8.13 Point of Final Disposition - Means a point in the downstream flow of materials where the separated materials

	generated from the processing of EOL Televisions and Computers become commodities used to produce new products or become a bye product waste for appropriate disposal. This includes: o Use as a raw material in the production process of new products; o Recovery of metal, energy and/or other resources; o Pelletization of plastics; o Landfill and incineration disposal. 'Bye product' should be by-product. At the Industry Consultation Workshop, it was discussed that references to Incineration would be removed. • 8.16 Recycler - A facility that undertakes recycling. We suggest that this be expanded to add: including manual dismantling and processing. It was discussed at the Industry Consultation Workshop that once any dismantling commenced, this moved the Collector to the Recycler category. Collector will collect and consolidate. Recycler will manually dismantle and / or process. • 8.18 Substances of Concern - Means substances or components making up EOL Televisions and Computers that in their normal state and under normal conditions of handling by a consumer pose little or no risk to human health or the environment but when handled, processed or transformed in large volumes at a recycling facility may be subject to specific regulatory requirements such as hazardous designation. These substances or components include mercury-containing devices, PCB capacitors, leaded glass, batteries, etc. We suggest that the last sentence of this definition be changed to reflect the substances of concern specifically outlined in Appendix 1: *These substances or components include circuit boards; batteries; cathode ray tubes (CRTs), leaded plasma display glass, and other leaded glass; lamps, bulbs and switches; insulated wire; plastics.* We also suggest the addition of ink and toner cartridges to this list and details added to Appendix 1. • 8. Definitions - We highlight the absence of the definition for Waste and as it is referred to throughout the standard (as a standalone word and not part of another definition) suggest that it is once again included in this list. • Appendix 2 Australia's Obligations under the Stockholm Convention on Persistent Organic Pollutants Table 1 - Under each "Effect of Listing", there is reference to a Footnote indicated as 1, however the actual Footnote cannot be located. • Appendix 5 Checklist for Collection Locations - Legal Compliance - We suggest that asking if licenses are available and up to date should be changed to providing copies of licenses in process of becoming an approved Collection Location. Appendix 5 Checklist for Collection Locations - Records and Monitoring - As per Traceability, suggest that date is added to the reporting – for Collection Locations, this would be date sent to Recycler.

	SIMS – • p6, Note 1 - The check list approach may be adequate for the initial introduction period, but an auditing authority needs to be identified (ie EPA/LGA/PSO?). Will stakeholders be able to raise issues with collection points or transport providers formally for the auditing authority for action – ie competitors reporting incorrect process or non-compliance? Suggest to set a target for collection location to be audited in their year 2 to 5 operation (base line audits)? • p8, point 3 - Note to include, that also downstream partners need ISO 14001 accreditation or an equivalent self declaration to state details of materials use/disposition and the percentage recovery (aim at 95%?). • p8, point 5 - This shall be an activity and cost for the governing body to audit, as more than tier two, three … to tier xxx processors may be involved, and also secondary traders of materials? Is this also a 'self declaration process' by tier providers and reportable to the dismantler/recycler of the originating materials from the secondary and third tier processor/handing agent? Suggest, a copy of the ISO 14001 accreditation provided by down stream processors be sufficient to settle this requirement? • p10 - *The provider shall….legal breaches or incidents* - Need to include explicitly stating the reporting of medically treatable injuries (MTI) and lost time injuries (LTI) …. See p11, 4.6(a) • p10, 4.4, b. - Collection points may not have any protection for this EoL equipment (is there a provision for the introduction period)? Transport providers to shield the equipment from exposure to the elements? It is difficult in a commercial environment to always operate under-cover or not store equipment in temporary areas that may be exposed to the elements with the flux in supply; Suggest clarifying that no processed equipment or resulting 'materials of concern' shall be exposed to the weather. • p10, last para - There shall be no 'uncontrolled tipping' **from height, say >30cm**, which may adversely affect the equipment. • p11, 4.6 (b) - …*reported in units or weight* - May need to read units **and/or** weight as prescribed • p11, 4.6 (c) - *…and any waste* - Waste service providers currently do not issue a weight decoration, as far as I know, and report on volume of 'bin' lifts…is this acceptable for the scheme as each recycler needs to weigh potentially their own waste (open to a loop hole)? • p11, 4.6 (d) - Add: Information provided will not be accessible by third parties and accepted as 'commercial in confidence' by the PSO. • p12, 5.2 - Add: signage to deter theft (theft is a criminal offence and scavenging not permitted) • p15, 7.4 - *Recyclers shall undertake…monitoring* - Suggest to define minimum substances for compulsory monitoring (ie Pb, Cd, C, Br etc) at a preset intervals. Work surface contamination monitoring required on a periodic bases; … how often shall monitoring take place? … to whom are records submitted? It is imperative that all recyclers are explicitly operating 'on

	a level playing field' to ensure competitive parity of the industry. • p15, 7.4 - PPE requirement determined by the specific processes employed for transportation, handling and recycling, and air and surface contamination/ monitoring. • p15, 7.4 - *…shall only go to landfill where no commercial viable recycling technology is available.* - This statement may create a loop hole to dispose of EoL equipment and needs to clarify the 'no economic' value proposition. How would this be monitored? Suggest to include consideration of 'travel distance' to the nearest recycling facility, and if the local landfill is 'lined' or not, and possibly if leachate is already high in heavy metals (?); Options would be to store equipment for 'at call' pickup or return via the nearest electrical retail outlet (ie. for back loading) in sea containers (easy, cheap, secure and readily available). Cost benefit analysis to be completed for areas where EoL ends in landfill? • Target omitted - Recycling targets are omitted fro stated reasons, but suggest a value of some 95% recovery and diversion from landfill; Collection target omitted, but would be accepted as nominated by the PSO. But, unless a local ban on e-waste to landfill will accompany the national roll-out within the designated geographical areas, only a collection target explicitly stated may offer an incentive to divert EoL from landfill; else, a success factor may not be quantified; • Enforcement - How will the standards be enforced, and escalation of disagreements handled? What percentage of equipment to landfill will be acceptable if transfer stations can not channel the equipment into the scheme in roll-out areas? Even if all data on reportable volumes collected by recyclers is reported, the shrinkage or leakage volume may not be measurable, that is, if a ban to landfill can not be enforced; • Health hazard to landfill - Manufacturers to include a WEEE type directive for the proper disposal of EoL TV and Computer equipment in their respective user manuals. This may need to be included in commercial instruction books/ installation and service manuals.

– If you see this symbol –

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)

This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

- p16 – ISO 26001 - Dismantling using prison labour may become a contentious issue once public – why the need to include it in the standard? Concerns of data security, and a 'drafted' labour force may be exploited by the media; A state subsidised prison labour force would need to provide a transparent operation with the identical OHS&E guidelines en force; and providing a quality service not aimed at monopolising markets or adversely affecting market offering for commercial e-waste recycling services in the same area; ISO26001 may not be regarded as sufficient to include this option here?
- p16 – EoL whole equipment export - The export of whole equipment for recycling to non-OECD countries is not an option if the scheme is to entice and promote the development or investment for the expansion of state-of-the-art e-waste processing facilities in Australia Export permits if available must be issued unilaterally in the public interest and shall not be unfairly applied, or awarded as an instrument for price competition, or be awarded on selected EoL equipment only (ie for computer products only)

	• p16 – Cables - The processing plants for cables are in China, but do not require a permit for export. • p16 – Batteries - Batteries to be segregated by type, and secured against discharge prior to road transport. Non-Rechargeable Batteries have at present a local solution (at a relatively high cost for current volumes); • p17 – CCFL - Recycling option available (but, relatively high cost for current volumes) • p17 – BFR - BFR identification currently is complex and the required equipment expensive. Without the ratification of the Stockholm convention unlikely to be implemented by industry at current costs. BFR plastics may not be able to be incinerated in all states to prevent emission of POPs… Alternatively, is lined landfill an acceptable option if BFR identification can be provided? • p18 – 7.5 – Targets - Without targets, no measurement of the efficiency in collections and recycling can be improved on. While the target measures and detail currently is not ideal, aiming 'too low' or 'no target' will provide little benefit of the scheme. • p19 – 7.7 - *…second and third party audits* - It is suggested, to maintain the integrity of the framework, to seek for the PSO to appoint and carry costs of audits of the processors through to the point of final disposition. As the PSO will be informed by recyclers, who will identify a suggested 'compliant' down stream processor, for the tractability of disposition, the cost to individual recyclers auditing independently the same potential downstream partners to the final disposition is ineffective. However, the PSO may 'audit' the material trial for multiple recyclers once this info is available as a one step process and maintain the economic integrity of the system most efficiently (individual recyclers will not know who is and who is not using the same down stream processors (Black box?), but will be informed by the PSO of any non-compliance.

Appendix B

DSEWPaC Risk Assessment Likelihood and Consequence Ratings

Risk Likelihood Rating

Almost certain	Is expected to occur in most circumstances
Likely	Will probably occur in most circumstances
Possible	Could occur at some time
Unlikely	Not expected to occur
Rare	May occur in exceptional circumstances only

Risk Consequence Rating

Description	Consequence of Occurrence
Critical	The consequences would gravely threaten major project or organisational objectives. Financial implications would have extreme consequences for the organisation.
Major	The consequences would threaten the continued effective functioning of the department. Financial implications would have very high consequences for the department.
Moderate	The consequences would not threaten the project or organisation, but would mean that the project or organisation could be subject to significant review and/or operational change. Financial implications would have medium consequences for the department.
Minor	The consequences would only threaten the efficiency or effectiveness of some aspects of the project or organisation, but could be dealt with internally. Any financial implication would be of low consequence.
Insignificant	The consequences could easily be dealt with by routine operations. Any financial implication would be of negligible impact.

Risk Analysis Matrix

LIKELIHOOD	CONSEQUENCE				
	Insignificant	**Minor**	**Moderate**	**Major**	**Critical**
Almost certain	Medium	High	Extreme	Extreme	Extreme
Likely	Low	Medium	High	Extreme	Extreme
Possible	Low	Low	Medium	High	Extreme
Unlikely	Low	Low	Low	Medium	High
Rare	Low	Low	Low	Low	Medium

	Extreme		High		Medium		Low

Appendix C

Assumptions Used in Allocation of Costs

1. The Decision RIS does not include costs directly associated with the implementation of the DIIS. Conversely, the costs outlined in the Decision RIS for collection locations and transporters ("Collection") and recyclers ("Reprocessing") have been assumed to include general set up and running costs of such facilities, outside of the specific requirements of the DIIS.
2. All internal resource costs to a company described in the assumptions below assume an hourly rate of approximately $77/hour, based on an estimated indicative salary for staff selected to carry out these tasks of $80,000, plus on-costs assumed at 80-100% of salary. This is based on an OH&S site manager's salary in the range $80,000 - $120,000 per annum (source: 2008 Safesearch/ Envirosearch Renumeration Survey).
3. All external consultant resourced costs to a company described in the assumptions below assume an indicative chargeable rate of approximately $175/hour (inclusive of GST),
4. Recycler costs to establish an ISO 14001 environmental management system (EMS) will vary according to company size. Recycling companies likely to be contracted by the PSO would be expected to be in the range 10-100 people per site. Based on discussions with existing recyclers (already accredited to ISO 14001) and KMH's previous experience in developing such systems for a range of organisations, we have assumed the cost to establish an ISO 14001 system ready for certification to be in the range $20,000 - $50,000 per site. This cost is based on the company having no existing system to build upon and the use of an external consultant to do it.
5. Costs for certification of a site's existing EMS by a third party certification body vary with size and complexity of operations at that site. Assuming a range of 10-100 employees per site, certification costs are estimated at $4,000-$10,000 per site. Subsequent follow up audits for compliance carried out by the certification body cost on average $2,000, and there is an average one audit per year over the 3 year life of certification. [Reference: personal communication with Trevor Phippen of Sustainable Certification].
6. Costs for collection locations and transporters to set up systems and procedures to comply with the DIIS are estimated to be on average 10% of the costs of setting up an EMS as per ISO 14001, based on lower complexity of operation with respect to environment and safety risk, the less stringent requirements of the DIIS compared to ISO 14001 and the fact that it would likely be done by in-house resources, which are assumed to be available at a cheaper hourly rate than external consultant rates.. This translates to $2,000 - $5,000 per site, or 25 – 65 internal person-hours.
7. Page 6, Note 1 of the DIIS states that collection locations will be subject to "periodic random audits of a percentage of locations." While it is not specific as to who will manage this audit regime, it has been assumed that these would be carried out by the certification body used for ISO 14001 certification and compliance verification audits. The scope of these audits would be much smaller than for an ISO 14001 certified EMS, but would still bear many fixed costs of the audit process, performed by a certification expert, regardless of what reference was used to audit against. Since a certification audit to ISO 14001 is estimated in "5" above to cost $4,000-$10,000 per site, audits against the DIIS's requirements for collection locations have been estimated to cost 50% of this, or $2,000 - $5,000. It has also been assumed that "periodic random audits of a percentage of locations" means that any company is likely to be audited once in 3 years.
8. As per "7", it has been assumed that due to the less onerous requirements of the DIIS compared to ISO 14001, internal audits/ self assessments for transporters and collection locations have been assumed to take 1.5 days of internal resources, or cost approximately $1,000. While this cost could vary with facility size as in the assumptions above, a range has not been provided since the uncertainty in the estimate is high compared to the small size of the estimate.
9. It has been assumed that compliance costs for recyclers in meeting the requirements specifically laid out in the DIIS are captured fully in ISO 14001 set up and verification costs, or are part of standard operating practice, except for environmental monitoring (e.g. air quality and noise), reporting waste amounts and recycling rates to the PSO (including data gathering, management and record keeping) and downstream processor due diligence with respect to environment, health and safety,
10. The DIIS does not directly require downstream processors to be ISO 14001 certified, because the PSO's contracting reach will not extend beyond the primary recycler. However, the

credentials of the downstream processor is a pertinent consideration for the primary recycler's procurement and contracting decisions, and section 7.7 of the DIIS does require them to document evaluation and selection processes, plus periodically audit contracted downstream processors to assess their environmental, health and safety impacts. No costs have been apportioned to secondary processors in this analysis, as they are not directly captured by the DIIS, but these procurement processes and auditing costs have been attributed to the primary recycler, respectively, at $5,000 (65 internal hours) and $2,000 (per audit).

11. "Costs to make the system work" for recyclers recognises the internal resources required to ensure staff are continually trained in the use of the EMS, the system is maintained as current as functional, staff use the system as part of their existing business processes, the organisation is appropriately prepared for audits, resourcing of corrective actions and any incremental additional requirements that the operation of the system places on all staff. For a site with 20 staff or more, this effort is estimated at 0.25FTE which equates to $40,000, based on a salary and on-costs figure of $160,000 per year (see "2" above). For sites below 20 staff, this is estimated at half of this figure, or $20,000.
12. "Costs to make the system work" for collection locations and transporters recognises the internal resources required to ensure relevant staff are trained in the requirements of the standard, the organisation is appropriately prepared for audits and self-assessments, resourcing of corrective actions and any incremental additional requirements that the operation of the system places on all staff. For collection locations this effort is estimated at 0.05FTE which equates to $8,000, based on a salary and on-costs figure of $160,000 per year (see "2" above). Because the DIIS requirements specific to transporters are primarily legal requirements that would be expected to be already accounted for in day to day business, these costs are estimated to be lower than for collection locations. Half the figure for collection locations, or $4,000, has been assumed for transporters.
13. Environmental monitoring costs for recyclers have been estimated at $10,000 for baseline testing for air quality parameters of concern and noise exposure, based on indicative costs for this sort of work as routinely provided by KMH Environmental.
14. Annual traceability reporting is assumed to be $3,000 per collection location, on the basis of 5 days person hours to locate, collate and report on waste quantities handled and origin and despatch locations. For recyclers this has been estimated as $6,000 (or approximately 10 days person hours), on the basis that more tracking is required to obtain data for recycling rates and multiple downstream processor locations.
15. It is assumed that data collection and record keeping systems would be established to allow for efficiencies in collating the data outlined in "14" above. Establishment of these systems is a one-off cost and is estimated at $9,000 (3 person weeks) for collection locations and $18,000 (6 person weeks) for recyclers respectively.

Appendix D

Risk Identification and Assessment

Table 8: Risk Analysis

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
(DIIS Section 2.)	*Lack of auditing system/guidelines from Government to ensure adherence to industry standards.*	• Lack of regulatory controls	• Uninformed operators carry out inappropriate recycling and transport practices that cause to the environment and employees.	The notes attached to Section 2 – Application, of the DIIS state that it is expected that an auditing regime will need to be established under the National Television and Computer Product Stewardship Scheme to monitor compliance of collection locations.	Incomplete	Likely	Moderate	High	Refer to risk treatment plan
(Section 3 DIIS)	*Failure of the DIIS to provide guidance on landfilling or alternatives as a final point of disposal..*	• The lack of guidelines on final point of disposal and acceptable volumes • Apathy of the operator	• Inappropriate end disposal • Increased volumes of EOL product sent to landfill	Table 1 – Material Processing and End Use Acceptability provides details of acceptable processes for component materials.	Adequate	Possible	Minor	Medium	Implementation of Standard requirement and auditing to ensure compliance.
Transport Requirements ***(DIIS Section 3.)***	*Failure to identify wastes as trackable or prescribed industrial waste.*	• Lack of regulatory requirements • Failure to adhere to regulatory requirements	• Contaminated waste is disposed of at an unlicensed or inappropriate facility	Section 7.5 of the DIIS – Traceability requires recyclers to fully account and report by weight the downstream flow and handling of materials and components from EOL product. This section requires Substances of Concern to be	Adequate	Possible	Moderate	Medium	Implementation of auditing regime

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
				tracked through each Downstream Processor to the "Point of Final Disposition."					
(DIIS Section 4.)	*Potential for pollution of stormwater where runoff passes through goods stored inappropriately and exposed to weather.*	• EOL product stored at an unlicensed/inappropriate location and product is exposed to the elements.	• Potential to cause pollution to adjacent water ways	Section 4.4 Receiving Handling and Storage requires EOL product and separated components to be stored and handled in a manner that provides protection from *"(b)" Exposure to the elements eg; because of leaching risk*."	Adequate	Unlikely	Moderate	Medium	Implementation of auditing regime
General Requirements (Section 4.1 DIIS)	*Operator fails to develop and implement documented work methods describing safe and environmentally sound practices*	• Untrained operator doesn't understand the operational risks and requirements. • Lack of industry standard requirement and/or enforcement.	• Potential harm to employees and the environment as a result of unsafe work practices.	Section 4.1 of the DIIS requires collection locations, transporters and recyclers to have documented work methods describing safe and environmentally sound practices.	Adequate	possible	Moderate	High	Refer to risk treatment plan
(Section 4.1 DIIS)	*Inadequate training and assessment of competence of staff.* *Staff not appropriately trained to handle, dismantle,*	• Operator tries to save money by employing untrained staff.	• Employees inadequately equipped to perform the necessary tasks.	Section 4.1 (b) of the DIIS requires management to conduct training and assessment of all people involved in carrying out the identified activities. Sub clause (e) requires records of	Strong (once enforced)	Unlikely	Moderate	Medium	Enforcement of the Standard requirements

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	recycle and treat goods.			training, assessment and monitoring to be maintained.					
(Section 4.1(c) DIIS)	*Lack of monitoring systems eg; site inspections or audits to ensure adoption/implement ation of safe work methods.*	• Unregulated industry/operatio ns	• Environmental damage • Employees unnecessarily exposed to harmful substances	Section 4.1 (d) of the DIIS requires collection locations, transporters and recyclers to monitor worker exposure or air emissions if potential exposure above safe limits is identified as a potential risk. The notes attached to Section 2 – Application, of the DIIS state that it is expected that an auditing regime will need to be established under the National Television and Computer Product Stewardship Scheme to monitor compliance of collection locations.	Adequate	Unlikely	Modera te	Mediu m	Implementa tion of auditing regime
(Section 4.1(c) DIIS)	*Failure to maintain records of training, assessment and monitoring*	• Unregulated industry/operatio ns	• No ability to audit staff capability and identify future training needs	Section 4.1 (e) of the DIIS requires collection locations, transporters and recyclers to maintain records of training, assessment and monitoring.	Strong	Unlikely	Minor	Mediu m	Implementa tion of auditing regime
Requirements for	*Failure to accurately track hazardous waste to its ultimate*	• Lack of regulatory requirements • Failure to adhere	• Contaminated waste is disposed of at an unlicensed or	Section 7.5 of the DIIS – Traceability requires recyclers to fully account and report by weight	Strong	Unlikely	Modera te	Mediu m	Maintain existing controls

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
Recyclers ***(DIIS – Section 4.2)***	*point of disposal at licensed premises.*	to regulatory requirements	inappropriate facility	the downstream flow and handling of materials and components from EOL product. This section requires Substances of Concern to be tracked through each Downstream Processor to the "Point of Final Disposition."					
Requirements for Collection Locations ***(DIIS Section 4.4)***	*EOL goods received at an unsuitable premises/location that is operated by an unauthorised recycler.*	• Failure to uphold licensing requirements • Insufficient/inadequate audit/regulatory system in place.	• Unsafe storage and/or disassembly of EOL product.	The notes attached to Section 2 – Application, of the DIIS state that it is expected that an auditing regime will need to be established under the National Television and Computer Product Stewardship Scheme to monitor compliance of collection locations. Section 4.2 Legal Compliance, requires operators to maintain a documented process to identify, assess and ensure compliance with this standard and all applicable regulatory requirements.	Incomplete	Possible	Moderate	Medium	Implementation of auditing regime
The following three risks can be summarised as **"Improper dismantling/separation results in the release of hazardous substances to which employees are exposed."** Full details of each risk are presented as the impacts, controls and treatment vary.									
Requirements for Recyclers	1. *Employees are exposed to*	• Materials deposited at an Inappropriate	• Workplace becomes hazardous to	Section 7.4 – Processing and Handling requires the removal of	Adequate	Unlikely	Major	High	Refer to risk treatment

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
DIIS – Section 7 and Appendix 1	*mercury contamination due to failure to remove lamps and bulbs prior to shredding or mechanical processing*	facility • Operator fails to adhere to regulatory operating requirements • Regulatory requirements not enforced	employees	components, prior to processing, likely to pose a health and safety risk. This section of the DIIS requires as a minimum the removal of; • **Mercury** bearing lamps • Ink and toner cartridges • Batteries • CRT and flat panel displays.					plan
DIIS – Section 7	2. *Inappropriate separation techniques are applied to recover resources.*	• Inexperienced operator adopts unsafe separation techniques	• Potential for harm to the environment and employees	Appendix 1 – Smelting, Energy Recovery and Disposal recommends the facility seek an air emission control permit specifically authorize the processing of electronic scrap. These guidelines recommend the complete thermal destruction of hydrocarbons to reduce dioxin emissions. The guidelines also recommend the removal of all plastic prior to smelting.	Incomplete	Possible	Moderate	Medium	Information contained in Appendix 1 needs to be more prescriptive and included in the body of the Standard.
DIIS- Section 7.4	3. *Failure to appropriately separate materials for*	• Insufficient guidelines	• Exposure to hazardous materials • Contamination of	Section 7.4 requires "Substances of Concern" to be kept separate to ensure integrity and traceability of	Incomplete	Possible	Moderate	Medium	The guidelines provided in Appendix 1

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	recycling.		recovered materials • Environmental damage from incorrect disposal	the material stream. Appendix 1 of the DIIS provides guidance on the environmentally sound recycling of electronics including material separation.					are an extract from another set of Guidelines from Canada. These should be more formally adopted and prescribed as apart of the Standard rather than a reference to an Appendix that then refers to another set of guidelines.

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
DIIS – Appendix 1	*Improper mechanical or manual dismantling results in the release of hazardous substances to which employees are exposed.*	• Materials deposited at an Inappropriate facility • Operator fails to adhere to regulatory requirements • Regulatory requirements not enforced	• Workplace becomes hazardous to employees	Section 7.4 requires "Substances of Concern" to be kept separate to ensure integrity and traceability of the material stream. Appendix 1 of the DIIS requires appropriate controls to prevent worker exposure to be implemented and maintained.	Incomplete	Possible	Moderate	Medium	Information contained in Appendix 1 needs to be more prescriptive and included in the body of the Standard.
DIIS – Section 7	*Failure to remove components from EOLE prior to mechanical processing.*	• Lack of identification of hazardous materials at time/point of receipt • Inexperienced operator fails to identify hazardous components and/or adopts unsafe separation techniques	• Potential for harm to the environment and employees	Section 7.4 – Processing and Handling requires the removal of components, prior to processing, likely to pose a health and safety risk. This section of the DIIS requires as a minimum the removal of; • Mercury bearing lamps • Ink and toner cartridges • Batteries • CRT and flat panel displays.	Adequate	Possible	Moderate	Medium	Implementation of auditing regime
DIIS – Section 7	*DIIS requirement for EMS certification prevents otherwise*	• Insufficient funds to undertake the necessary	• Lack of facilities to cope with demand leads to			Likely	Minor	Medium	Establish sufficient infrastructu

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	credible operators from receiving/ disassembling EOL stock.	requirements for certification • Lack of understanding of the requirements	below optimum disposal practices						re to meet demand.
DIIS Section 7	*Insufficient funds available in the event of major pollutant releases, mismanagement or closure of the facility.*	• Lack of regulation • Operator goes out of business	• In the event of an environmental incident, the cost of cleanup would be borne by government	Section 7.2 – Insurance requires recyclers to have a documented closure plan that assures proper closure of the facility in the event of business failure or shutdown to ensure the avoidance of any abandonment of EOL products, components or materials. The closure plan must be supported by proof of a sufficient financial instrument to guarantee the execution of the closure plan.	Strong	Unlikely	Modera te	Mediu m	Maintain existing controls
DIIS – Section 7.4	*Failure to ensure staff are provided with necessary personal protective equipment.*	• Unlicensed operator • Lack of understanding of OH&S risks	• Injury to employees	Appendix 5 of the DIIS provides a checklist of requirements for employees working in the facilities. This checklist includes provision and correct use of any personal protective equipment	Incomplet e	Possible	Modera te	Mediu m	Completion of checklist should be mandatory and included in the body of the Standard.

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
DIIS – Section 7.4	*Mechanical material processing and separation facilities are not properly equipped with dust collection and other environmental control measures such as air emission control systems.*	• Materials deposited at an Inappropriate facility • Operator fails to adhere to regulatory requirements • Regulatory requirements not enforced	• Workplace becomes hazardous to employees	Section 7.4 – Processing and Handling dictates the equipment required to be installed at the recycling facility. This includes a dust collection system, an emergency shut off system, adequate fire suppression equipment and other safety/environmental control equipment identified in the plan arising from the risk assessment.	Strong	Possible	Modera te	Mediu m	Maintain existing controls
Requirements for Recyclers ***DIIS – Appendix 1***	*Risk of fire resulting from failure to remove batteries from motherboards prior to shredding.*	• Failure to identify presence of batteries • Inexperienced operator fails to remove batteries	• Fire causing damage to life and property	Section 7.4 – Processing and Handling requires the removal of components, prior to processing, likely to pose a health and safety risk. This section of the DIIS requires as a minimum the removal of; • Mecury bearing lamps • Ink and toner cartridges • **Batteries** • CRT and flat panel displays.	Adequate	Possible	Major	High	Refer to risk treatment plan
Reuse Applications	*Inappropriate secondary application of*	• Incorrect classification of material	• Contaminated product used as virgin material	Appendix 1 – Cathode Ray Tube, Leaded Plasma Display Glass and Other Leaded Glass, identifies non-	Incomplet e	Possible	Modera te	Mediu m	Information contained in Appendix 1

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
DIIS – Appendix 1	*recovered resources eg: use of leaded glass from plasma screens as a substitute for sand.*	• Contaminated product sent for reuse/ secondary application	substitute	environmentally sound reuse applications and recommends avoiding these practices.					needs to be more prescriptive and included in the body of the Standard.
(Consolidated Stakeholder Comments - response to Q1.)	*Lack of minimum recycling rate or requirement for highest use practices, in the DIIS discourages recyclers from recovering materials leading to unnecessary disposal to landfill.*	• No requirement to achieve a minimum level of recycling	• Unnecessary disposal of EOL product to landfill due to lack of incentive to divert maximum volume possible.	Table 1 – Material Processing and End Use Acceptability specifies recycling processing, end-use, or method of disposal. Where components are and materials are deemed to be recoverable, Landfill or incineration are "not acceptable" as disposal options. The Drafting note adjacent to Section 7.5 Traceability, states that *international developments will continue to be monitored in this area and recovery and recycling rates will be specified in the Product Stewardship Organisation procurement specifications. They will be based on the agreed National Television and Computer Scheme KPIs and available technology.*	Incomplete	Possible	Moderate	Medium	Formal development and adoption of PSO procurement specifications to ensure adoption of recovery and recycling rates

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
(Consolidated Stakeholder Comments – response to Q1.)	*Failure to minimise carbon emissions associated with recycling practices.*	• Lack of knowledge regarding carbon emissions from associated recycling practices and LCA results in more damage to the environment.	• Increased carbon emissions	Section 3-of the DIIS Guiding Principles requires decisions about treatment of EOL Televisions and Computers to consider the waste management hierarchy and the principles of ecologically sustainable development including minimising carbon emissions.	Incomplete	Likely	Moderate	High	Refer to Risk Treatment Plan
(Consolidated Stakeholder Comments – response to Q1.)	*Failure of the DIIS to require identification of hazardous substances prior to disposal.*	• No regulatory requirement • Recyclers unknowingly process EOL product containing hazardous substances	• Environmental damage • Potential safety risk to staff	Appendix 1 of the DIIS provides guidance on the environmentally sound recycling of electronics.	Weak	Possible	Moderate	Medium	Guidelines should be more prescriptive and become formal requirement of industry operators/ recyclers.
(Consolidated Stakeholder Comments – response to Q1.)	*Brominated Fire Retardant contaminated plastics are sent to landfill.*	• Lack of knowledge that BFR is present • Poor separation practises result in cross	• Environmental damage	Appendix 1 of the DIIS provides guidance on the environmentally sound recycling of electronics and specifically identifies *Brominated Fire Retardant as a "substance of*	Incomplete	Possible	Moderate	Medium	Guidelines should be more prescriptive and become

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
		contamination with BFR.		*concern" when addressing plastics recovery.*					requirement of industry operators/ recyclers.
(Consolidated Stakeholder Comments – response to Q1.)	*Failure of the DIIS to require recycling of associated packaging waste.*	• Lack of regulatory controls • Cost of recovery versus disposal	• Failure to recover recyclable resources leading to increase in waste to landfill	Table 1 – Material Processing and End Use Acceptability advises that recoverable packaging materials must be recovered and reprocessed where possible. Land filling of recyclable material is no acceptable.	Adequate	Possible	Minor	Medium	Implementation of Standard requirement and auditing to ensure compliance.
(***(Consolidated Stakeholder Comments – response to Q2.)***	*Failure of the DIIS to accurately define the role of recyclers results in uncontrolled practices.*	• Lack of regulatory controls/definitions	• Unauthorised operators set up and carry out business in an unsafe and potentially damaging manner.	Section 7 of the DIIS Requirements for Recyclers identifies the operational requirements for recyclers. Section 8 – Definitions provides a definition for "Recycler" and "recycling."	Incomplete	Possible	Moderate	Medium	Recovery and recycling rates need to be developed and agreed upon as per the drafting note included under Section 7.5.

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
(Consolidated Stakeholder Comments - response to Q2.)	*Failure of recycling facilities to document safe exposure limits for airborne toxins including lead, toner dust, silica, beryllium etc and Noise levels.*	• Lack of knowledge • Lack of formal procedures in place • Lack of regulatory requirement	• Employees are unnecessarily exposed to airborne toxins	Section 7.4 – Processing and Handling dictates the equipment required to be installed at the recycling facility. This section also requires recyclers to undertake monitoring of air quality and noise levels.	Strong	Unlikely	Moderate	Medium	Maintain existing controls
(Consolidated Stakeholder Comments - response to Q3.)	*Use of charity/ disability labour and failure to provide a safe work environment and training on appropriate work practices.*	• Lack of knowledge • Lack of formal procedures in place • Staff ability	• Unsafe work practices lead to employee harm	Section 4.1 (b) of the DIIS requires management to conduct training and assessment of all people (regardless of ability) involved in carrying out the identified activities.	Adequate	Possible	Moderate	Medium	Implementation of auditing regime
(Consolidated Stakeholder Comments – response to Q4.)	*Lack of encouragement for job creation/industry establishment in local areas for local waste treatment (esp. in rural areas.)*	• Lack of government support • Ineffective funding structure to encourage new players into the market	• Lack of facilities to cope with demand leads to below optimum disposal practices.		None in place	Likely	Minor	Medium	Provision of government support to ensure establishment of sufficient facilities.

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
(Consolidated Stakeholder Comments - feedback to Q4.)	*Failure to accredit sufficient number of operators/ locations to meet demands leads to disposal at inappropriate facilities*	• Lack of government support • Ineffective funding structure to encourage new players into the market	• Lack of facilities to cope with demand leads to below optimum disposal practices.		None in place	Likely	Minor	Mediu m	Establish sufficient infrastructu re to meet demand.
(Consolidated Stakeholder Comments - response to Q5.)	*Failure of the DIIS to address the 9 new POPs identified under the Stockholm Convention*	• Lack of regulation/guidan ce from government.	• Identified POPs remain in the waste stream with potential to cause severe environmental damage • Australia fails to maintain its obligations under the Stockholm Convention	Appendix 2 of the DIIS identifies Australia's obligations under the Stockholm Convention on Persistent Organic Pollutants. This section also refers to the nine new chemicals added to the Convention's Annexes.	Incomplet e	Likely	Modera te	High	Refer to risk treatment plan Of the nine new POPs, the ones with implications for recycling are the BFRs. The other chemicals aren't particularly relevant in the context of plastic recycling -

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
									Appendix 2 could be improved to explain this.
(Consolidated Stakeholder Comments - Feedback to Q5.)	*Failure to separate substances of concern for integrity and traceability.*	• Failure to adhere to regulatory requirements	• Contaminated waste is disposed of at an unlicensed or inappropriate facility	The "Notes" to accompany Table 1 Material Processing and End Use Acceptability, the DIIS states that Draft European standards such as Weelabex define acceptable levels of particular BFRs in end of waste plastic. In addition the Australian Government is monitoring the work of the scientific committee established under the Stockholm convention to develop guidance materials on how to tackle issues such as identification of waste articles that contain BFRs, procedures for detection and separation, issues associated with recycling and appropriate methods of destruction. Industry's intention is that as soon as commercially viable separation methods are available and further guidance materials are available these will be adopted either in the interim industry standard or in the	Incomplete	Possible	Moderate	Medium	Development and adoption of prescriptive guidelines when commercially viable separation methods are available.

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category & Origin	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
				broader Australian Standard under development. Section 7.4 also requires "Substances of Concern" to be kept separate to ensure integrity and traceability of the material stream.					
Transport Requirements ***(Consolidated Stakeholder Comments - Additional Issues)***	*Export to non OECD countries without the appropriate permit under the Hazardous Waste Act*	• Lack of regulation/auditing of operations	• International embarrassment and penalties	Table 1 – Material Processing and End Use Acceptability, states "exporting to non-OECD countries for the purpose of recycling and/or disposal without the appropriate permit under the Hazardous Waste Act," is not acceptable for specified materials.	Adequate	Unlikely	Major	High	Refer to risk treatment plan
(Consolidated Stakeholder Comments - response to Q2.)	*Lack of baseline data for exposure to hazardous substances.*	• No industry guidelines	• Failure to identify hazardous levels of toxic substances	Section 4.1 (d) Risk Management requires monitoring of worker exposure or air emissions if potential exposure above the safe exposure limits or potential for emissions to atmosphere have been identified as a potential risk.	Adequate	Unlikely	Moderate	Medium	

Appendix E – Regulatory Risk Review

Table 9: Regulatory Risk Review

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
Legal Compliance									
Hazardous Waste (Regulation of Exports and Imports) Act 1989 (Part4)									
Section 40 **Regulation of export of hazardous waste**	*Export hazardous waste without permit to export or order to export*	• Permit not obtained • Order to export not given	• Conviction	Section 2 of the standard – *Application* – includes the following control: *"The Interim industry Standard does not absolve collection locations, transporters or recyclers from any federal, state and/or municipal legislation and regulations applicable to their business operation. It is the responsibility of the operator to be aware of and abide by all such legislation and regulations."*	Adequate	Unlikely	Major	High	Refer to Risk treatment plan.
Section 40AA **Regulation of sale of hazardous waste**	*Sell waste to body corporate outside Australia where the body corporate does not have a*	• No due diligence undertaken • Permit not obtained	• Conviction	Section 2 of the standard – *Application* – includes the following control: *"The Interim industry Standard does not absolve collection locations, transporters or recyclers from any federal, state*	Adequate	Unlikely	Major	High	Refer to Risk treatment plan

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	registered office and an executive in Australia; and knowing the waste will be exported by the body corporate (or is reckless as to whether knowing);and export permit not in force at time of sale.			*and/or municipal legislation and regulations applicable to their business operation. It is the responsibility of the operator to be aware of and abide by all such legislation and regulations."*					
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal									
Article 4(b)	*Parties shall prohibit or shall not permit the export of hazardous wastes and other wastes to the Parties which have*	• Prohibited waste exported	• Contravention of Basel Convention	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlik ely	Majo r	Hig h	Refer to Risk treatment plan

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	prohibited the import of such wastes								
Article 6 **Transboundary Movement between Parties**	*The State of export shall not allow the generator or exporter to commence the transboundary movement until it has received written confirmation that:* *(a) The notifier has received the written consent of the State of import; and* *(b) The notifier has received from the State of import*	• Waste exported prior to receiving written consent	• Contravention of Basel Convention	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlikely	Major	High	Refer to Risk treatment plan

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	confirmation of the existence of a contract between the exporter and the disposer specifying environmentally sound management of the wastes in question.								
Article 9 ***Illegal Traffic***	*For the purpose of this Convention, any transboundary movement of hazardous wastes or other wastes:* *(a) without notification pursuant to the provisions of this Convention to all States*	• Consent not obtained; • Falsification of consent • Non-conforming consent • Disposal contravenes intent of Basel convention	• Contravention of Basel Convention	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlikely	Major	High	Refer to Risk treatment plan

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	concerned; or *(b) without the consent pursuant to the provisions of this Convention of a State concerned; or* *(c) with consent obtained from States concerned through falsification, misrepresentation or fraud; or* *(d) that does not conform in a material way with the documents; or* *(e) that results in deliberate disposal (e.g. dumping) of*								

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	hazardous wastes or other wastes in contravention of this Convention and of general principles of international law, *shall be deemed to be illegal traffic.*								
Stockholm Convention on POPs									
Article 3 Measures to reduce or eliminate releases from intentional production and use	*That a chemical listed in Annex A for which any production or use specific exemption is in effect or a chemical listed in Annex B for*	• Export not for environmentally sound disposal	• Contravention of the Basel and Stockholm Conventions	Where the Stockholm POP is identified as a waste that requires final disposal, then compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989 is required.	Adequate	Unlikely	Major	High	

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	which any production or use specific exemption or acceptable purpose is in effect, taking into account any relevant provisions in existing international prior informed consent instruments, is exported only: *(i) For the purpose of environmentally sound disposal as set forth in paragraph1 (d) of Article 6;*	• Export not for environmentally sound disposal	• Contravention of Basel and Stockholm Conventions	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlikely	Major	High	
	(ii) To a Party which is	• Export not to party permitted	• Contravention of Stockholm	Commonwealth Government does not appear to have a direct	Inadequate *	*	*	*	*

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	permitted to use that chemical under Annex A or Annex B; or *(iii) To a State not Party to this Convention which has provided an annual certification to the exporting Party. Such certification shall specify the intended use of the chemical and include a statement that, with respect to that chemical, the importing State is committed to:*	to use the chemical • Export not to party which has provided export certification.	Convention • Contravention of Stockholm Convention	control in place* Commonwealth Government does not appear to have a direct control in place*	Inadequate *	*	*	*	*

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	a. Protect human health and the environment by taking the necessary *measures to minimize or prevent releases;* *b. Comply with the provisions of paragraph 1 of Article 6; and* *c. Comply, where appropriate, with the provisions of paragraph 2 of Part II of Annex B.* *(c) That a chemical listed in Annex A, for*	• Export not for environmentally sound disposal	• Contravention of Basel and Stockholm	Compliance with Section 40A of the Hazardous Waste (Regulation	Adequate	Unlik ely	Majo r	Hig h	

Part A - Risk Identification and analysis									
1	2	3	4	5	6	7	8	9	10
Risk Category	**Description of risk (What can happen)**	**Potential causes/sources (of an event happening)**	**Potential impacts (if a risk event happens)**	**Existing controls (what is in place NOW to minimise risk)**	**Control ratings**	**Likeli-hood**	**Conse-quence**	**Risk Level**	**Further Treatment?**
	which production and use specific exemptions are no longer in effect for any Party, is not exported from it except for the purpose of environmentally sound disposal as set forth in paragraph 1 (d) of Article 6;		Conventions	of Exports and Imports) Act 1989					

* When export of a Stockholm POP involves prior consent for use of the chemical, the Hazardous Waste (Regulation of Exports and Imports) Act 1989 does not apply. Consequently, this risk of the chemical being inappropriately used under the convention (by a party or State not permitted to use the chemical) appears to have no control. This has been flagged as an issue for the Commonwealth Government, but not considered specifically in the Risk Treatment Plan (Appendix F) since it is not a risk that either arises as a direct implication of the DIIS, or applies to parties to the scheme.

Appendix F – Risk Treatment Plan

Table 10: Risk Treatment Plans

Risk Category & Origin	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likelihood	Consequence	Risk Level
General Requirements (Section 4.1 DIIS)	*Operator fails to develop and implement documented work methods describing safe and environmentally sound practices*	• Untrained operator doesn't understand the operational risks and requirements • Lack of industry standard requirement and/or enforcement.	• Potential harm to employees and the environment as a result of unsafe work practices.	Section 4.1 of the DIIS requires collection locations, transporters and recyclers to have documented work methods describing safe and environmentally sound practices.	Adequate	possible	Moderate	High

Further Treatment:

To coincide with the implementation of the DIIS, DSEWPaC in cooperation with the Product Stewardship Organisation, need to implement the auditing regime suggested in the notes attached to Section 2 to monitor compliance of operators. Whilst Section 4.2 Legal Compliance, requires operators to maintain a documented process to identify, assess and ensure compliance with this standard and all applicable regulatory requirements, without a robust monitoring/auditing scheme in place and an accompanying timetable, the risk of harm to an employee and/or the environment remains high.

The development and rollout of a familiarisation/training program for operators is also recommended to provide detailed information on the specific reporting requirements of the Standard.

Timeframe for Implementation:

To coincide with the implementation of the Standard.

Responsibility: PSO under the approved arrangement.

It should be noted that this risk is likely to remain "High" as there is always the possibility that this may occur and the consequences would remain at least "moderate."

Risk Category & Origin	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likelihood	Consequence	Risk Level
Section 6 - Transport Requirements ***(Consolidated Stakeholder Comments - Additional Issues)***	*Export to non OECD countries without the appropriate permit under the Hazardous Waste Act*	• Lack of regulation/auditing of operations	• International embarrassment and penalties	Table 1 – Material Processing and End Use Acceptability, states "exporting to non-OECD countries for the purpose of recycling and/or disposal without the appropriate permit under the Hazardous Waste Act," is not acceptable for specified materials.	Adequate	Unlikely	Major	High

Further Treatment

This risk has rated as "High" primarily due to the potential consequence should the risk occur. *The Hazardous Waste Act 1989* conveys Australia's obligations with the exporting of waste and the requirements of the Act are again reiterated in the DIIS. Associated risks have also been identified in the Regulatory Risk review included in Section 3.3.1. To further mitigate this risk, the requirements of the *Hazardous Waste Act 1989 a*nd how they apply to DIIS associated activities could also be included in the proposed training/familiarisation program suggested as an improvement measure in the risk treatment plan above.

Timeframe for Implementation:

To coincide with the implementation of the Standard.

Responsibility: PSO under the approved arrangement.

It should be noted that this risk is likely to remain "High" as the consequence will always be major.

Risk Category & Origin	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likelihood	Consequence	Risk Level
Section 7 - Requirements for Recyclers	*Risk of fire resulting from failure to remove batteries from motherboards prior to shredding.*	• Failure to identify presence of batteries • Inexperienced operator fails to remove batteries	• Fire causing damage to life and property	Section 7.4 – Processing and Handling requires the removal of components, prior to processing, likely to pose a health and safety risk. This section of the DIIS requires as a minimum the removal of; • Mercury bearing lamps • Ink and toner cartridges • Batteries • CRT and flat panel displays.	Adequate	Possible	Major	High

Further Treatment

Section 7.4 of the DIIS already requires the safe removal of components prior to processing. This risk is more likely to occur in facilities that are not experienced in appropriate materials separation and handling. Training and familiarisation for all "accredited" operators is recommended to coincide with the implementation of the DIIS and ensure the associated risks are fully understood. In addition all disassembly facilities should be fitted with appropriate early smoke detection equipment, and other suitable fire retardant equipment. Appendix 1 of the DIIS provides guidance on the environmentally sound removal of electronics however this is an extract from the Canadian Standard. In order to strengthen the requirement of the Standard in relation to this issue it is recommended that the contents of Appendix 1 become more prescriptive or included in the body of the Standard rather simply referred to in the risk management section.

The introductory comments of Appendix 1 state the guidance document was developed to serve as an educational document. It would therefore be useful to ensure the contents are included into a training session for delivery to operators as outlined in the risk treatment plans above.

Timeframe for Implementation:

To coincide with the implementation of the Standard.

Responsibility:

PSO under the approved arrangement.

It should be noted that this risk is likely to remain "high" as the consequence will always be major.

Risk Category & Origin	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likelihood	Consequence	Risk Level
Section 7 - Requirements for Recyclers	*Employees are exposed to mercury contamination due to failure to remove lamps and bulbs prior to shredding or mechanical processing*	• Materials deposited at an Inappropriate facility • Operator fails to adhere to regulatory operating requirements • Regulatory requirements not enforced	• Workplace becomes hazardous to employees	Section 7.4 – Processing and Handling requires the removal of components, prior to processing, likely to pose a health and safety risk. This section of the DIIS requires as a minimum the removal of; • Mercury bearing lamps • Ink and toner cartridges • Batteries • CRT and flat panel displays.	Adequate	Unlikely	Major	High

Further Treatment

To coincide with the implementation of the DIIS, the approved arrangement needs to implement the auditing regime suggested in the notes attached to Section 2 to monitor compliance of operators. Whilst Section 4.2 Legal Compliance, requires operators to maintain a documented process to identify, assess and ensure compliance with this standard and all applicable regulatory requirements, without a robust monitoring/auditing scheme in place and an accompanying timetable, the risk of harm to an employee and/or the environment remains high.

Section 7.4 of the DIIS already requires the safe removal of components prior to processing. This risk is more likely to occur in facilities that are not experienced in appropriate materials separation and handling. Training and familiarisation for all "accredited" operators is recommended to coincide with the implementation of the DIIS and ensure the associated risks are fully understood. In addition all disassembly facilities should be fitted with appropriate extraction and filtration equipment and PPE for all employees. Appendix 1 of the DIIS provides guidance on the environmentally sound removal of electronics however this is an extract from the Canadian Standard. In order to strengthen the requirement of the Standard in relation to this issue it is recommended that the contents of Appendix 1 become more prescriptive or included in the body of the Standard rather simply referred to in the risk management section.

The introductory comments of Appendix 1 state the guidance document was developed to serve as an educational document. It would therefore be useful to ensure the contents are included into a training session for delivery to operators as outlined in the risk treatment plans above.

Timeframe for Implementation: To coincide with the implementation of the Standard.

Responsibility: The approved arrangement.

It should be noted that this risk is likely to remain "High" as the consequence will always be major.

Risk Category & Origin	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likelihood	Consequence	Risk Level
(Consolidated Stakeholder Comments – response to Q1.)	*Failure to minimise carbon emissions associated with recycling practices due to insufficient knowledge around LCA.*	• Lack of knowledge regarding carbon emissions from associated recycling practices results in more damage to the environment.	• Increased carbon emissions	Section 3-of the DIIS Guiding Principles requires decisions about treatment of EOL Televisions and Computers to consider the waste management hierarchy and the principles of ecologically sustainable development including minimising carbon emissions.	Incomplete	Likely	Moderate	High

Further Treatment

The Standard needs to adopt a more prescriptive approach and/or access to more detailed information to inform operators on ecologically sustainable practices to ensure carbon emissions from associated practices are minimised. Currently, Section 3 "Guiding Principles" provide nothing but a cursory reference to carbon emissions and no further guidance on how best to ensure emissions are minimised. It would be acceptable to adopt existing guidelines or principles that provide detail on how to manage associated carbon however this Standard needs to clearly state that it requires operators to adhere to/implement whatever additional documents it chooses to adopt.

Timeframe for Implementation: Prior to release of the Standard.

Responsibility: DSEWPaC

By implementing the suggested improvements the likelihood of this risk occurring would drop to possible thus reducing the overall rating to Moderate.

Risk Category & Origin	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likelihood	Consequence	Risk Level
(Consolidated Stakeholder Comments – NGO response to Q5.)	*Failure of the DIIS to address the 9 new POPs identified under the Stockholm Convention*	• Lack of regulation/guidance from government.	• Identified POPs remain in the waste stream with potential to cause severe environmental damage • Australia fails to maintain its obligations under the Stockholm Convention	Appendix 2 of the DIIS identifies Australia's obligations under the Stockholm Convention on Persistent Organic Pollutants. This section also refers to the nine new chemicals added to the Convention's Annexes.	Incomplete	Likely	Moderate	High

Further Treatment

Of the 9 new POPs, the ones with implications for recycling are the BFRs. The other chemicals aren't particularly relevant in the context of plastic recycling - Appendix 2 could be improved to explain this.

Timeframe for Implementation: Prior to release of the Standard.

Responsibility: DSEWPaC

Risk Category & Origin	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likelihood	Consequence	Risk Level
Section 40 **Regulation of export of hazardous waste**	*Export hazardous waste without permit to export or order to export*	• Permit not obtained • Order to export not given	Conviction	Section 2 of the standard – *Application* – includes the following control: *"The Interim industry Standard does not absolve collection locations, transporters or recyclers from any federal, state and/or municipal legislation and regulations applicable to their business operation. It is the responsibility of the operator to be aware of and abide by all such legislation and regulations."*	Adequate	Unlikely	Major	High
Further Treatment								
To ensure transporters and operators are fully aware of their regulatory requirements relating to the export of hazardous waste, it is recommended that the requirements of the Hazardous Waste Act and how they apply to DIIS associated activities are included in the proposed training/familiarisation program suggested as an improvement measure in the risk treatment plan above. The approved arrangement should ensure that DSEWPaC is consulted in relation to all training material and provided the opportunity to participate. **Timeframe for Implementation**: To coincide with the implementation of the Standard. **Responsibility**: DSEWPaC ***It should be noted that this risk is likely to remain "high" as the consequence will always be major.***								

Risk Category	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likeli-hood	Conse-quence	Risk Level
Section 40AA **Regulation of sale of hazardous waste**	*Sell waste to body corporate outside Australia where the body corporate does not have a registered office and an executive in Australia; and knowing the waste will be exported by the body corporate (or is reckless as to whether knowing);and export permit not in force at time of sale.*	• No due diligence undertaken • Permit not obtained	• Conviction	Section 2 of the standard – *Application* – includes the following control: *"The Interim industry Standard does not absolve collection locations, transporters or recyclers from any federal, state and/or municipal legislation and regulations applicable to their business operation. It is the responsibility of the operator to be aware of and abide by all such legislation and regulations."*	Adequate	Unlikely	Major	High

Further Treatment

To ensure transporters and operators are fully aware of their regulatory requirements relating to the sale of hazardous waste, it is recommended that the requirements of the Hazardous Waste Act and how they apply to DIIS associated activities are included in the proposed training/familiarisation program suggested as an improvement measure in the risk treatment plan above. The approved arrangement should ensure that DSEWPaC is consulted in relation to all training material and provided the opportunity to participate. In addition DSEWPaC could provide guidance on the necessary due diligence required to ensure a breach does not occur.

Timeframe for Implementation: To coincide with the implementation of the Standard.

Responsibility: DSEWPaC

It should be noted that this risk is likely to remain "high" as the consequence will always be major.

Risk Category	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likeli-hood	Conse-quence	Risk Level
Basel Convention Article 4(b)	*Parties shall prohibit or shall not permit the export of hazardous wastes and other wastes to the Parties which have prohibited the import of such wastes*	• Prohibited waste exported	• Contravention of Basel Convention	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlikely	Major	High
Further Treatment								
To ensure transporters and operators do not contravene *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* it is recommended that the requirements of the Hazardous Waste Act and the Basel Convention are included in the proposed training/familiarisation program suggested as an improvement measure in the risk treatment plan above. The approved arrangement should ensure that DSEWPaC is consulted in relation to all training material and provided the opportunity to participate. **Timeframe for Implementation**: To coincide with the implementation of the Standard. **Responsibility**: DSEWPaC and the approved arrangement. ***It should be noted that this risk is likely to remain "high" as the consequence will always be major.***							

Risk Category	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likeli-hood	Conse-quence	Risk Level
Basel Convention ***Article 6*** **Transboundary Movement between Parties**	*The State of export shall not allow the generator or exporter to commence the transboundary movement until it has received written confirmation that:* *(a) The notifier has received the written consent of the State of import; and* *(b) The notifier has received from the State of import confirmation of the existence of a contract between the exporter and the disposer specifying environmentally sound management of the wastes in question.*	• Waste exported prior to receiving written consent	• Contravention of Basel Convention	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlikely	Major	High
Further Treatment								
To ensure transporters and operators do not contravene *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* it is recommended that the requirements of *the Hazardous Waste Act 1989* and the Basel Convention are included in the proposed training/familiarisation program suggested as an improvement measure in the risk treatment plan above. **Timeframe for Implementation**: To coincide with the implementation of the Standard. **Responsibility**: DSEWPaC and the approved arrangement. ***It should be noted that this risk is likely to remain "high" as the consequence will always be major.***							

Risk Category	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likeli-hood	Conse-quence	Risk Level
Basel Convention ***Article 9*** ***Illegal Traffic***	*For the purpose of this Convention, any transboundary movement of hazardous wastes or other wastes:* *(a) without notification pursuant to the provisions of this Convention to all States concerned; or* *(b) without the consent pursuant to the provisions of this Convention of a State concerned; or* *(c) with consent obtained from States concerned through falsification, misrepresentation or fraud; or* *(d) that does not conform in a material way with the documents; or* *(e) that results in deliberate disposal (e.g. dumping) of hazardous wastes or other wastes in contravention of this Convention and of general principles of international law,* *shall be deemed to be illegal traffic.*	• Consent not obtained; • Falsification of consent • Non-conforming consent • Disposal contravenes intent of Basel convention	• Contravention of Basel Convention	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlikely	Major	High
Further Treatment								
To ensure transporters and operators do not contravene *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* it is recommended that the requirements of the Hazardous Waste Act and the Basel Convention are included in the proposed training/familiarisation program suggested as an improvement measure in the risk treatment plan above. **Timeframe for Implementation**: To coincide with the implementation of the Standard. **Responsibility**: DSEWPaC ***It should be noted that this risk is likely to remain "high" as the consequence will always be major.***							

Risk Category	Description of risk (What can happen)	Potential causes/sources (of an event happening)	Potential impacts (if a risk event happens)	Existing controls (what is in place NOW to minimise risk)	Control ratings	Likeli-hood	Conse-quence	Risk Level
Stockholm Convention ***Article 3 Measures to reduce or eliminate releases from intentional production and use***	*That a chemical listed in Annex A for which any production or use specific exemption is in effect or a chemical listed in Annex B for which any production or use specific exemption or acceptable purpose is in effect, taking into account any relevant provisions in existing international prior informed consent instruments, is exported only:* *(i) For the purpose of environmentally sound disposal as set forth in paragraph1 (d) of Article 6;*	• Export not for environmentally sound disposal	• Contravention of Basel and Stockholm Conventions	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlikely	Major	High
	(c) That a chemical listed in Annex A, for which production and use specific exemptions are no longer in effect for any Party, is not exported from it except for the purpose of environmentally sound disposal as set forth in paragraph 1 (d) of Article 6;	• Export not for environmentally sound disposal	• Contravention of Basel and Stockholm Conventions	Compliance with Section 40A of the Hazardous Waste (Regulation of Exports and Imports) Act 1989	Adequate	Unlikely	Major	High

Further Treatment

This risk and its consequences relate to contravention of the Stockholm Convention on POPs. Given the complexities of the compliance requirements / it is recommended that the requirements of the Hazardous Waste Act and the Basel Convention are included in the proposed training/familiarisation program.

Timeframe for Implementation: To coincide with the implementation of the Standard.

Responsibility: DSEWPaC

It should be noted that this risk is likely to remain "high" as the consequence will always be major.

Appendix G – International Best Practice Review

Table 11: International Best Practice Review

DIIS Issue	DIIS	Canada Electronics Recycling Standard	Weeelabex	The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment	Gaps in DIIS
General requirements					
Risk management	– *Document safe work method* – *Training and assessment of staff* – *Self assessment/audit* – *Monitor worker exposure (air / noise)* – *Keep records of training* – *Develop / maintain 14001 system.*	– *Develop / maintain 14001 system.* – *Maintain worker committee to evaluate OHS* – *Annual risk assessment of hazards and worker exposure* – *Safeguard hazardous mechanical process against injury* – *Air sampling for contaminants (human health)* – *Monitor worker exposure* – *Implement policies for eating/drinking and hygiene*	– *Training and assessment of staff* – Requirement to monitor	– *Document aspects and impacts* – *Training procedure* – *Internal audit / self assessment* – *Monitoring and measuring* – *Keep records* – *Establish health and safety committee* – *Worker training program* – Evaluate compliance	– *Does not require written policies for hygiene, eating and drinking to reduce worker exposure to contaminants* – *Does not require establishment of health and safety committee*
Legal Compliance	– *Document compliance against the standard and all relevant legislation*	– *Document process for reporting breaches to Program manager*	– *Document compliance against all relevant legislation*	– *Legal compliance register and procedure*	

DIIS Issue	DIIS	Canada Electronics Recycling Standard	Weeelabex	The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment	Gaps in DIIS
	– *Document process for reporting breaches to PSO*	– *Document compliance against the standard and all relevant legislation*			
Emergency Response	– *Implement / maintain an ERP*	– *Implement / maintain an ERP*	*Not specifically addressed*	– *Emergency response procedure*	
Receiving handling and storage	– *Handle and store in a manner to protect from* o *Theft* o *Exposure to elements* o *Exposure of people* o *CRT or flat panel breakage*		– *Handle and store in a manner to protect from* o *Theft* – *Store only as much as can be treated in 6 months*	– *Full OHS assessment reviewed every 3 years*	– *No specification on amount that can be stored at any given time*
Data security	– *Display sign notifying that responsibility for data security rests with owner*	– *Facility to have data storage destruction process*	*Not specifically addressed*	– *Customer to sign a waiver if data security not offered* – *If data security offered, terms to be fully described*	– *No data security required*
Reporting	– *Report to PSO:* o *Within 5 days of incident* o *On quantity and origin of items processed* o *Amount recycled and disposed* o *Quantity dispatched*	– *Document downstream flow including how goods processed and percentage of materials sent to each processor*	– *Document quantities of WEEE collected and forwarded and maintain records for 3 years.* – *Treatment operator to provide evidence of meeting targets in EC Directive* –	– *Report to a central database on specified information (e.g. materials processed)*	

DIIS Issue	DIIS	Canada Electronics Recycling Standard	Weeelabex	The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment	Gaps in DIIS
	to downstream processors and name of processor				
Records Management	– *Maintain records for 3 years* – *Maintain CoC; waste records etc*	– *Maintain records for three years* – *Maintain evidence of transport permits etc where required*	– *Maintain records for 3 years*	– *Establish procedure to control records*	
Disposal to landfill	– *Only dispose waste at licensed facility*	*Not specifically addressed*	*Not specifically addressed*	*Not specifically addressed*	
Requirements for collection locations					
Access	– *Easily accessible to public*	– *Prevent unauthorised access*		*Not specifically addressed*	
Signage	– *Clear signage for public*	*Not specifically addressed*	*Not specifically addressed*	*Not specifically addressed*	
Storage	– *Clearly marked and segregated*	– *Specifies controls for storage*	– *Specifies controls for storage to ensure minimisation of environmental harm* – *Specifies controls for storage for goods intended for reuse* – *Specifies controls for separation of WEEE from other wastes*	– *Specifies controls for storage to ensure minimisation of environmental harm*	
Fees	– *No cost to public*	*Not specifically addressed*	*Not specifically addressed*	*Not specifically addressed*	

DIIS Issue	DIIS	Canada Electronics Recycling Standard	Weeelabex	The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment	Gaps in DIIS
Downstream processing / recycling	– *Only send to certified recyclers* – *Prepare for transport in accordance with recycler instructions*	– *Trace and document downstream logistic chain.*	– *Trace and document downstream logistic chain.*	– *E-steward remains accountable for material until final disposition.* – *Use certified recyclers or* – *Conduct rigorous audit/analysis of facility prior to engaging services*	
Transport requirements					
Domestic	– *Comply with transport and DG legislation*	– *Maintain evidence of transport permits where required*	– *Includes requirements for cross-border shipments* – *Includes specific requirements for CRTs and flat panel displays*		– *No specific requirements for CRTs and flat panel displays*
Export	– *Comply with packing requirements in the United Nations Committee of Experts on the Transport of Dangerous Goods - Recommendations on the Transport of Dangerous Goods'* – *Comply with Hazardous Waste Act 1989* – *Use licensed transporter* – *Use trained staff*	*Not specifically addressed*		– *Comply with relevant international conventions (e.g. Basel)*	
Requirements for recyclers					
Certification	– *Hold 14001 certification*	– *Maintain 14001-consistent system, but not certified*	*Not specifically addressed*	– *Based on 14001*	

DIIS Issue	DIIS	Canada Electronics Recycling Standard	Weeelabex	The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment	Gaps in DIIS
Insurance	– *Hold appropriate insurances* – *Documented closure plan*	– *Prescriptive requirements for insurance* – *Documented closure plan*	– *Hold appropriate insurances* – *Insurance to cover plant closure*	– *Hold appropriate insurances* – *Documented closure plan*	
Goods receiving and storage	– *Instruct collection sites and transporters on appropriate storage/packing receptacles (or provide)*		– *Test for reuse / refurbishment functionality* – *Specifies controls for storage to ensure minimisation of environmental harm* – *Specifies controls for storage for goods intended for reuse* – *Specifies controls for separation of WEEE from other wastes*	– *Test for reuse / refurbishment functionality* –	
Processing and handling	– *Specifies controls for mechanical processing* – *Specifies monitoring requirements* – *Specifies separation and storage requirements for Materials Of Concern* – *Promotes waste hierarchy*	– *Specifies controls for mechanical processing*	– *Specifies controls for handling to ensure safety and minimisation of environmental harm* – *Requirement to monitor "de-pollution" outcomes*	– *Remove wastes of concern prior to processing* – *Store/manage removed wastes of concern appropriately* –	