

NATIONAL TELEVISION & COMPUTER RECYCLING SCHEME Roll-out in Western Australia

WASTE AUTHORITY WA

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EXECUTIVE SUMMARY

Electronic waste, including televisions and computers are a significant part of the waste stream in need of attention. An estimated total of 137,756 tonnes of televisions and computers reached end of life in Australia in 2012–13 (Australian Government 2014).

In response to this trend and the proliferation of consumer electronics and IT equipment, the National Television and Computer Recycling Scheme (NTCRS) commenced in November 2011, and is the primary mechanism for television and computer recycling in Australia.

This report, produced for the Waste Authority (WA), identifies key issues relating to the rollout of the NTCRS in WA and options to address those issues identified. The project comprised a desktop review of existing documents and reports; an online survey of local and regional councils in WA, as well as WALGA; a small sample of face-to-face interviews with WA stakeholders; and several telephone interviews with Co-regulatory Arrangement (CA) administrators. The information and data resulting from each of these elements was further moderated by pre-existing knowledge and direct operational experience.

Some key observations include:

- The general tone and attitude among WA stakeholders participating in the NTCRS is positive and enthusiastic; non-participants are more cynical and critical.
- The NTCRS is a relatively new scheme operating under new legislation and therefore it is not unusual to see evidence of establishment-phase challenges.
- The recycling target is a national figure that is not further apportioned by state or territory. Provided the overall target is met by the NTCRS there is no compulsion for any of the CAs to collect a minimum volume of TV/IT waste in any one State or Territory.
- The cost of transport and logistics in WA appears to be a major factor affecting the ability of more local councils participating in the NTCRS, particularly those councils with smaller populations located in regional and remote parts of the State.
- Concern by some stakeholders that the Commonwealth Regulator is detached from how the NTCRS is being implemented and operationalised on-the-ground in WA.
- A perception that on-the-ground interaction between CAs and WA stakeholders is limited.
- The need for increased community awareness and associated education activities.
- TV/IT waste being lost to landfill because of verge or hardwaste collections.

Based on the stakeholder feedback and the online survey of local and regional councils, a number of key issues been identified under six themes. These relate to:

- Emerging Issues and Dynamics
- Implementation and Regulatory Issues
- Market and Material Issues
- Cost and Financial Flows
- Community Awareness and Engagement
- Contract Issues

The NTCRS (and its ongoing roll-out in WA) is well placed to improve despite initial 2012-13 collections being relatively low.

The key success factors are likely to be focused on achieving the necessary regulatory amendments, as well as increased communication and improved collaboration between all stakeholders involved.

GLOSSARY

TERM	DESCRIPTION
Act	Product Stewardship Act 2011
AG	Australian Government
ANZRP	Australia & New Zealand Recycling Platform Limited
CA	Co-regulatory Arrangement(s)
DER	Department of Environment Regulation
DHL	DHL Supply Chain (Australia) Pty Ltd
Ecycle	Ecycle Solutions Pty Ltd
EPSA	Electronics Product Stewardship Australasia (a company of Sims Recycling Solutions)
NTCRS	National Television and Computer Recycling Scheme
RE	Reverse E-Waste
Regulations	Product Stewardship (Televisions and Computers) Regulations 2011
Regulator	Commonwealth Department of the Environment as Regulator of the NTCRS
TGR	Total Green Recycling
TV/IT waste	Television and computer waste as specified under the Regulations
WMAA	Waste Management Association of Australia
WATEP	Western Australian Transitional E-waste Program



1. INTRODUCTION

1.1 Project background and scope

Electronic waste, including televisions and computers are a significant part of the waste stream in need of attention. An estimated total of 137,756 tonnes of televisions and computers reached end of life in Australia in 2012–13 (Australian Government 2014). In response to this trend and the proliferation of consumer electronics and IT equipment, the National Television and Computer Recycling Scheme (NTCRS) commenced in November 2011, and is the primary mechanism for television and computer recycling in Australia.

The NTCRS is funded and run by the television and computer industry, and regulated by the Australian Government under the *Product Stewardship Act 2011* and the Product Stewardship (Televisions and Computers) Regulations 2011. The NTCRS seeks to increase the recycling of televisions and computers from an estimated 17 per cent of waste generated in 2010 to a target of 80 per cent by 2021–22.

In 2011, the Western Australian Waste Authority introduced the Western Australian Transitional E-waste Program (WATEP). The WATEP was designed to help 'bridge the gap' while the national scheme was introduced. The WATEP ended on 31 December 2013. With the completion of the WATEP and the release of the first annual report into the NTCRS, it is now timely to assess the status of e-waste recycling in WA with particular reference to the NTCRS.

The project comprised a desktop review of existing documents and reports; an online survey of local and regional councils in WA, as well as WALGA; a small sample of face-to-face interviews with WA stakeholders; and several telephone interviews with Co-regulatory Arrangement Administrators. The information and data resulting from each of these elements was further moderated by pre-existing knowledge, experience and Intellectual Property held by Infoactiv.

The Waste Authority recognises that the NTCRS is the primary mechanism for e-waste recycling in WA. It is important that the national scheme succeeds in delivering its objectives and targets. The Waste Authority has received preliminary advice on the status of e-waste recycling in WA, which indicates:

- The recycling rate achieved in WA is likely to be well below the 2012/13 national target of 30%;
- Reasonable access to collection points (as required by the national scheme) appears to have generally been achieved throughout much of WA however it is likely that additional efforts will be required in this area particularly in the early years of the scheme.

This project seeks to build on the preliminary advice provided to the Waste Authority and to report on key issues and options for the sector in WA.

1.2 Methodology and stakeholder engagement process

The methodology for the project comprised four elements:

- Desktop review of existing documents and reports from Government agencies
- Online survey of local councils and regional councils in WA, including WALGA
- Face-to-face interviews with a small sample of WA stakeholders
- Telephone interviews with Co-regulatory Arrangement Administrators

The information and data resulting from each of these elements was further moderated by pre-existing knowledge, experience and IP held by Infoactiv.

The research process inherently covered a review of 'top-down' information sources i.e. annual reports about the NTCRS published by the Australian Government and the relevant CAs. This enabled a perspective to be understood as expressed by those parties directly affected by the Product Stewardship (Televisions and Computers) Regulations and the wider NTCRS.

A 'bottom-up' approach to stakeholder engagement was utilised via the online survey and interviews, which allowed stakeholders to share their views, opinions and suggestions, and to be heard directly unfiltered by third-party reports.

Noting that the project was conducted over a short timeframe and with limited resources, the methodology outlined above is both proportionate and well suited to the project objectives and scope.



2. CONTEXT AND RESEARCH

2.1 National context and performance

The development of the Product Stewardship Act 2011 provides for potentially diverse solutions to address environmental and human health related impacts associated with the production and consumption of manufactured products and materials. Furthermore, the subordinate Product Stewardship (Televisions and Computers) Regulations 2011, which enabled the creation of the NTCRS, specify the detailed requirements under which organisational and operational matters are identified, monitored, managed and enforced.

The Australian Government provides a concise and uncomplicated description of the NTCRS, its aim and how it works:

What is the National Televisions and Computer Recycling Scheme?

The National Television and Computer Recycling Scheme is a recycling service for televisions, computers and computer products. The Scheme is funded and run by the television and computer industry, and regulated by the Australian Government under the *Product Stewardship Act 2011* and the Product Stewardship (Televisions and Computers) Regulations 2011.

What are the aims of the Scheme?

Electronic waste, including televisions and computers, is growing three times faster than any other type of waste in Australia. The Scheme will boost the recycling of televisions and computers from an estimated 17 per cent of waste generated in 2010 to a target of 30 per cent in 2012–13. The Scheme recycling targets will then progressively increase each year, reaching 80 per cent of waste generated by 2021–22. The Scheme will also increase the amount of valuable materials recovered from waste televisions and computers, as well as reducing the amount of materials (including hazardous substances) entering the environment.

How does the Scheme work?

Under the Scheme, companies who manufacture televisions, printers and computer products and or import televisions, computers, printers and computer products over a certain volume are required to join an approved 'co-regulatory arrangement'. These arrangements are responsible for the collection and recycling of televisions and computers. A co-regulatory arrangement may do this in a variety of ways, such as by partnering with an existing recycling service or facility or holding periodic take-back events.¹

It is important to note that the NTCRS is a relatively new scheme operating under new legislation and therefore it is not unusual to see evidence of establishment-phase challenges. As regulated parties and other participating stakeholders settle into a steady-state of operation, it is likely that some of the current challenges (eg. community awareness, legalistic contracts, stockpiling of CRT glass, cost of transport and recycling), may reduce or become less significant in terms of overall NTCRS success against stated objectives.

¹ Online source 9th June 2014: <http://www.environment.gov.au/topics/environment-protection/national-waste-policy/television-and-computer-recycling-scheme-1>

The NTCRS has filled a major gap in providing many households and small businesses with an industry-funded collection and recycling service for TV/IT waste. There are however, many local governments across Australia that are yet to participate in the NTCRS or have not been identified as relevant/suitable under the Reasonable Access requirements of the Regulations.

As part of creating the NTCRS, the Australian Government made a very clear and strong pronouncement that e-waste not covered by the NTCRS remained the responsibility of state, territory and local government. This issue is a recurring theme and a topic of concern that will be covered in other sections of the report.

2.2 Western Australia context and performance

According to the majority of participating stakeholders, the cost of doing business in WA is a significant contributing factor to the comparatively lower level of TV/IT waste being collected and recycled in year one. A straightforward content analysis approach provides some insights into the pros and cons of how each of the annual reports has considered implementation of the NTCRS in WA.

What does the Australian Government's 2012-13 annual report say about WA specifically?

The only reference to Western Australia is alongside all other states and territories where a summary table notes the number of collection services provided (51), and the total collected weight (811 tonnes). The volume collected per site in WA averaged approximately 16 tonnes. This compares to 90 tonnes per site in South Australia at the highest end, 40 tonnes per site in Victoria (mid range), and 1 tonne per site in the Northern Territory at the lowest level.

The report by explicit omission fails to state whether the CAs met their Reasonable Access targets for WA, and that such information will be included in future reporting (yet to be published at June 2014). Specifically the Australian Government says:

"DHL Supply Chain, ANZRP and Ecycle Solutions were required to deliver reasonable access to collection services to communities in metropolitan, regional and remote Australia by 31 December 2013. Assessment of arrangements' performance against this requirement was not completed at the time of this report and will be captured in future reporting. Detail on the collection services provided by these arrangements in the period to 30 June is given in their annual reports, which are available in the Department's website."

No other commentary or data is contained in the Australian Government's report within the context of performance in WA.

What does ANZRP's 2012-13 annual report say about WA specifically?

A detailed breakdown of total weight of products collected in each state and territory included reference to WA. These figures are contained in the ANZRP report which is available on the Department's website. There is no specific reference to whether Reasonable Access was achieved in WA by ANZRP TechCollect for 2012-13.

No other commentary or data is contained in the ANZRP report within the context of performance in WA.

What does DHL's 2012-13 annual report say about WA specifically?

A detailed breakdown of total weight of products collected in each state and territory included reference to WA. These figures are contained in the DHL report which is available on the Department's website. A general claim is made with regard to being the first CA to achieve coverage in every state and territory. The report also includes a list of collection services and types in WA, however there is no specific reference to whether Reasonable Access was achieved in WA by DHL Drop Zone for 2012-13.

No other commentary or data is contained in the DHL report within the context of performance in WA.

What does Ecycle Solution's 2012-13 annual report say about WA specifically?

Very little data or information is provided, other than:

- 119,709 kg of televisions and 9,784 kg of computers collected in Outer Regional areas of WA; and
- a spreadsheet listing of a non-eligible (under Reasonable Access) collection service at Albany Transfer Station.

No other commentary or data is contained in the Ecycle Solutions report within the context of performance in WA.

Other observations

Collectively, the four reports appear to have furnished the minimum possible information and data required under the Regulations. This information gap relates to the absence of adequate communication and/or analysis of year one issues, as well as no discussion of any issues in need of corrective action or improvement for year two: 2013-14.

Most importantly, there are several key issues affecting WA, which were not covered but could have been flagged as areas of potential attention for year two. More specifically there was no discussion or analysis of critical issues relevant to WA such as:

- Plans or corrective actions to ensure increased collections in WA for year two
- Analysis and proposals for more cost effective collections from regional and remote areas in WA
- Plans or corrective actions to increase the level and effectiveness of community education, and how the Regulator might encourage CAs to improve their respective performance on this issue
- Plans or proposals by the Regulator and the CAs of council frustration associated with by-catch or non-regulated e-waste not being covered by CAs

2.3 Reporting by the Australian Government and CAs

From a top-down perspective, the first suite of official NTCRS annual reports from the Australian Government and the CAs were published in February 2014.

The 12 page report published by the Australian Government was incomplete and failed to elaborate on any matters outside some introductory comments, some history and outcomes for the NTCRS first year of operation.

The Australian Government did not fully report on its assessment of how the CAs performed against the Reasonable Access requirements. The absence of this assessment provides no formal or official transparency as to how each of the CAs performed nationwide or in each state and territory. There is already some debate among some CAs and other stakeholders about whether Reasonable Access was indeed achieved by any of the three relevant CAs in year one i.e. 2012-13. Most importantly this particular issue has implications for the future roll-out of the NTCRS in WA.

In addition, the Australian Government's report does not adequately elaborate on other important aspects of the NTCRS such as:

- under-representation of TV/IT waste volume collected in WA in 2012-13
- the cost of doing business in regional and remote areas is a risk to the NTCRS long-term
- exclusion from the NTCRS of many regional and remote councils eg. WA
- minimal community awareness and education activities promoting the NTCRS
- overly legal and burdensome contracts imposed on councils by some of the CAs
- council frustration associated with by-catch or non-regulated e-waste not being covered by CAs

These topics (real and perceived) should have been discussed within the context of year one performance but also with regard to flagging their potential impact and relevance in year two. Many of these issues have been raised during interviews and the online survey.

The 2012-13 annual reports published by the CAs vary in depth and quality. The ANZRP and DHL reports provided a mix of useful quantitative and qualitative data as well as contextual information related to their respective organisations and associated PR and 'good news'.

All three reports did not feature any information about their respective members or liable parties, which provides no visibility about industry players, Original Equipment Manufacturer (OEM), brands and importers participating in the NTCRS.

This 'black-box' approach does not assist in building confidence with the community about who is funding the Arrangements. Nor does this omission assist with more openly disclosing important information about which television and computer companies are involved and complying with the Regulations.

The eight page Cycle Solutions report provides the minimum possible data and provides no detail whatsoever about the nature and location of collection services it conducted over 2012-13.

The Cycle Solutions report also serves to illustrate the negative consequences of not having the Material Recovery Target in place for 2012-13. Although not in any breach of the Regulations for the first year of operation, Cycle Solutions legally disposed of 1,143,489 kg of leaded and non-leaded CRT glass to landfill.

A perverse outcome of this situation is that Cycle Solutions has still been able to carry forward 401,352 kg as a surplus for the 2013-14 year of the NTCRS. The under-discussion of such issues by the Australian Government and the CA itself, illustrates some deficiencies in the Regulations, which may be partly addressed when the Material Recovery Target comes into force from July 2014.

2.4 Stakeholder Views related to Western Australia

Establishing dialogue with relevant stakeholders in WA was an essential component of the project. This allowed direct communication with those organisations participating in NTCRS, and also provided an on-the-ground perspective from key players such as local government, regional groups, recyclers and CAs.

The annual reports from the Australian Government and the CAs provided a snapshot of year one performance of the NTCRS, however the content was high level and reduced to (incomplete) reporting against the NTCRS targets i.e. reasonable access (collection services) and recycling rates.

The value of more direct stakeholder engagement in WA as conducted through this project, provides input and feedback that represents a more qualitative perspective i.e. views, experiences, opinions, ideas expressed by participants.

Engaging with relevant stakeholders was an essential component of the review and involved:

- face-to-face interviews with Recyclers, CAs, WALGA and some local councils
- phone interviews with CAs;
- a detailed online survey of 39 local councils across WA

The following discussion and analysis provides some useful insights on performance, relationships, monitoring and enforcement, as well as opportunities for improvement by various stakeholders.

2.4.1 Co-regulatory Arrangements

There are currently five CAs operating under the NTCRS. Three of these commenced in the scheme's first year of operation 2012-13: DHL, ANZRP and Ecycle Solutions. The remaining two relatively new CAs commenced during the 2013-14 year of operations: Reverse E-Waste and EPSA.

This section summarises the key points of agreement between the CAs, but also notes points of divergence and difference.

Points of agreement and divergence between CAs

- The two larger CAs (DHL and ANZRP) and EPSA agree that the NTCRS has experienced a successful start despite minor teething problems associated with any establishment phase. They believe that overall performance has been satisfactory.
- Ecycle Solutions and Reverse E-Waste believe it is too early to make any assessment on many aspects of the NTCRS's implementation.
- All CAs agreed that the cost of implementation in WA is higher than in other, more densely populated States, and that the cost of doing business is an ongoing challenge.
- All CAs noted that the cost of meeting Reasonable Access in regional and Remote WA is expensive and that greater collaboration between affected stakeholders may help to address this aspect.
- There was a general view held by the CAs that councils needed to acknowledge that the NTCRS and its delivery was not totally 'free' and that local government still holds some financial responsibility in helping to provide an e-waste service to its communities.
- ANZRP noted that the NTCRS needed a more consistent community education message on e-waste and local government should lead this. The absence of a consistent message was considered to be a potential impediment to the ongoing roll-out of the NTCRS nationwide.
- There was difference between the CAs on the extent to whether formal written agreements are in place with collection partners. The nature, extent and formality of agreements seem to vary considerably. ANZRP and EPSA noted that they used formal written agreements. Reverse E-Waste highlighted their use of plain English, and reader-friendly agreements. DHL cited a combination of approaches to agreements with collection partners –some formal and written, others less formal and verbal. Ecycle Solution's response to the question of agreements was limited and suggested a very informal process that was based on relationships with their retailer partners.
- There was agreement amongst all CAs that there was no clear leader on communication education and information activities in relation to the NTCRS. Most of CAs noted that the level of community education was poor, minimal or that more is required; 'not a roaring success' according to one CA.
- There was no common view on how to improve the NTCRS's ongoing roll-out, however DHL noted the need for more localised and/or decentralised solutions including the need for improved in-State recycling capabilities, beyond dismantling.
- ANZRP noted that increased collaboration between parties could lead to a far wider service and more equitable uptake of the NTCRS in WA.
- All CAs believed that Standards have a positive role to play in ensuring high levels of environmental and OH&S performance, but they stopped short of accepting the direct citing of standards in the Regulations.
- DHL believed that the WA Government could be a much stronger advocate of the NTCRS, and also do more to help fill 'gaps' in the NTCRS's roll-out, especially for those councils/regions not currently covered by services and events.

2.4.2 Recyclers

Soliciting feedback from recyclers on NTCRS related issues provides a direct perspective from one of the

most important stakeholder groups. Three recyclers were interviewed face-to-face during May 2014 with the aim of seeking their views, opinions and feedback on areas and opportunities for improvement moving forward. The following recyclers were interviewed:

- Total Green Recycling (TGR)
- Sims Recycling Solutions
- RecycleIT

None of the recyclers interviewed noted any significant technical problems with downstream processing or the ability to find markets for their materials. All three operators have markets for the materials resulting from their process.

While there is an added cost for transporting CRT glass to the eastern States, this was seen to be an added transport cost rather than a technical or downstream materials demand issue. Nonetheless, TGR acknowledged that increased WA processing infrastructure has the potential to add value to materials recovery prior to local sale or export, especially with regard to plastics from e-waste. Nonetheless, TGR did note the limited options for processing glass from LCD screens.

This section summarises the key points of agreement between the recyclers, but also notes points of divergence and difference.

Points of agreement and divergence between Recyclers

- There was a view from each of the recyclers that their particular service or operation was superior to their competitors and that 'policing' of 'others' was essential.
- Both TGR and Sims agreed that the Regulator should be doing more to demonstrate it is monitoring and enforcing the Regulations where required.
- Both TGR and Sims agreed that CAs are relatively detached from WA in terms of on-the-ground presence and regular interaction.
- Sims believed that the Australian Government should relax its position on exports and allow more CRT glass to be exported for processing in overseas countries. They reinforced the view that the cost of processing CRT glass to a high standard is prohibitive in Australia and non-existent in WA.
- Sims also noted the poor level of forecasting from CAs and other sources as to the likely volumes to be collected and processed during any given period.
- TGR noted that ongoing hardwaste or verge collections were negatively impacting on the potential volume of TV/IT waste that could be recycled.
- The relatively high cost of transport and logistics was seen as a limitation to more collection services and greater council participation.
- Both TGR and Sims agreed that more could be done to increase and improve the level of community education and information delivered by the CAs.
- TGR had much to say about performance (to date) on issues of equity and fairness among and between CAs and councils; inadequate community education; and the need to increase overall levels of TV/IT waste collected and recycled in WA.
- While agreeing with TGR and Sims on the need for increased 'policing' of the NTCRS and participants, RecycleIT was a distinct outlier in their views of the NTCRS believing it was a major failure and short-term 'band-aid' solution.
- RecycleIT also believed that issues of data security and inferior hardware destruction were present in the NTCRS and that some 'recyclers' were failing to adequately audit and manage their downstream processors and markets to protect data security.
- RecycleIT had a very strong view on all matters related to TV/IT waste processing and data security citing that maintaining its standards was cost prohibitive under the NTCRS.

Total Green Recycling

TGR held a mostly positive outlook of the NTCRS and its roll-out to date. They support the concept and

implementation of Product Stewardship and can see that some cost shifting from councils (to producers) has taken place in WA. This was considered a positive by TGR.

The company viewed itself as contributing diverse knowledge and expertise to the overall process. This covered logistics, recycling and data collection and reporting, as well as 'getting people on board' and indirectly raising community and council awareness. TGR believed that much more could be done (by CAs and the State Government) to service those areas and councils that are not currently part of the NTCRS.

Sims Recycling Solutions

Sims Recycling Solutions has been a major player in e-waste processing for many years. It should be noted that its role in WA is two-fold i.e. as a recycling provider to CAs under the NTCRS, as well as being a CA in its own right since the middle of 2013.

A separate interview was conducted with the Administrator of the Sims CAs – Electronics Product Stewardship Australasia, and views may differ/vary as a result. The company consistently noted that the high cost of logistics presented a major challenge and barrier to many regional and all remote municipalities from being adequately serviced under the NTCRS. Sims also noted its history and positive reputation associated with high standards of e-waste recycling and believed that much more should be done to audit and enforce all stakeholders involved in the collection, storage and processing of TV/IT waste under the NTCRS.

Given WA's relatively remote geography and limited processing capabilities for CRT glass, Sims believes that the Commonwealth should relax its position on exports and allow CRT glass to be processed in overseas countries.

RecycleIT

RecycleIT stated that the NTCRS was unsuccessful to date and an interim 'band-aid' as opposed to a long-term transparent solution for end-of-life TV/IT waste. The company's role in NTCRS to date was minimal and related to basic level processing and dismantling for sale of commodities.

2.4.3 Local Government and Regional Councils

Local government is a key stakeholder in relation to delivering, enabling and supporting waste minimisation and resource recovery activities for various waste streams, product categories and material types. Local Government has also been an important player in e-waste recycling activities, which preceded any services under the NTCRS.

The role of Local Government in WA has continued to be significant with the introduction of the NTCRS and some CAs, have and are, relying heavily on councils to act as consolidation points, collection services and community event hosts. While some councils have enjoyed the benefits of partnering with CAs, many councils remain un-serviced under the NTCRS.

It is important to note that the NTCRS and associated Regulations did not require every municipality to be serviced by a CA, however there is a perception by several councils in WA and elsewhere nationally, that the NTCRS was meant to totally replace any pre-scheme council activity on e-waste. Despite the perception held by councils, the Reasonable Access requirements under the NTCRS do not compel CAs to service all 562 local government bodies across Australia. To do so would significantly increase the associated costs of providing a service under the NTCRS.

The cost-shifting intentions of the NTCRS from councils and ratepayers, to producers and CAs have been partly addressed, and this is significantly dictated by the Reasonable Access requirements under the

Regulations. This does not however resolve the problem of many regional and remote councils who do not 'qualify' under Reasonable Access requirements. The situation is also compounded by a national or 'whole-of-nation' recycling target as opposed to any proportionate allocation to each State and Territory.

Given these factors and the nature of the NTCRS and associated Regulations, the views and opinions from local government are important inputs to any process aimed at ensuring a successful roll-out of the NTCRS in WA.

An online survey was widely circulated to local governments across WA. The survey was circulated by WALGA on behalf of the consultants, and targeted to waste, environment and sustainability staff i.e. those council professionals likely to be closest to any dealings with the NTCRS.

Key observations emerging from the Local Government survey

The following summary describes some of the more significant findings and also includes some brief discussion related to the survey figures.

The majority of respondents (65%) described the overall performance of the NTCRS as either Moderately successful, Successful or Very successful.

- This tends to suggest that those councils and regional councils that are participating in the NTCRS are experiencing beneficial collection and recycling outcomes.
- Only a small number of respondents (13.2%) felt that performance to date was Unsuccessful.
- It is likely that the majority of councils who are serviced by CA, view the NTCRS as positive, compared to those councils that are excluded, through their own choice or otherwise.

Less than half of the respondents combined (35%) described NTCRS performance in outer regional and remote areas of WA as either Moderately successful, Successful or Very successful.

- The level of knowledge regarding NTCRS performance in outer regional and remote areas of WA is low (45.9%), and this is understandable as most councils would primarily be familiar with their own particular circumstance.
- This also highlights an absence of official and freely available information about how and where the NTCRS is being rolled-out in WA and associated progress.

The three most popular answer options related to the 'advantages of NTCRS participation' included Landfill diversion (84.2%), Increased community awareness about e-waste recycling (73.7%), and Improved recycling service to the community (65.8%).

- This may suggest that environmental impact and resource recovery issues, community awareness and quality of service are particularly important to councils.
- The open-ended comments also note the following advantages: "... reduced illegal dumping of e-waste; local government commitment to recycling; streamlines the e-waste recycling chain and removes one of the financial blocks ..."

The obvious disadvantages related to additional costs being incurred by council (47.4%) as well as Subsidising what CAs should be fully funding (34.2%).

- These responses indicate that the allocation of costs and who should or shouldn't pay is a noteworthy disadvantage of participating in the NTCRS. In contrast, a not insignificant number of respondents (31.6%) believed that 'There were no disadvantages'.
- The open-ended comments noted the following: lack of reporting on NTCRS progress; significant time has been expended to get councils on board; the advantages outweigh any disadvantages; TVs stacked and waiting for collection by the CA.

The overall tone and feeling indicates a positive relationship between respondents and their partner CAs, with a relative minority of respondents noting Negative, Reactive or Problematic relationships.

- The open-ended comments include: positive for collection but problematic for processing; still really getting things up and running; as a regional council representing several councils, the relationships vary; will help if we (council) cover transport costs

Half of all respondents (50%) believed that 'Inadequate community awareness ... about the NTCRS' was a potential barrier to the ongoing roll-out of the NTCRS in WA.

- The extent of infrastructure was also seen as a potential barrier with 47.4% of respondents noting 'Limited e-waste processing capabilities/facilities in WA'.
- In addition, almost half of the respondents (44.7%) identified 'Uncertainty about reliability of service funded/operated by the CAs' as a potential barrier to ongoing implementation.
- The open-ended comments note the following additional barriers: ongoing costs for processing by-catch and transport of e-waste to Perth; some smaller proactive councils in outer regional areas are still having to pay for transport of e-waste to Perth; negative or no reporting of the NTCRS; State and Federal Governments could provide assistance by promoting the NTCRS to reinforce the local message; the absence of continued long term funding to support smaller regional centres is critical to the service operating.

ANZRP TechCollect appears to be the dominant CA among respondents (36.8%), closely followed by DHL DropZone (15.8%).

- These figures reflect the two major CAs by nature of their collection networks and overall presence in WA, particularly across local and regional councils.
- ANZRP TechCollect's higher profile may also reflect a stronger online presence via social media, newspaper adverts and general PR activities.

Councils (65.8%) were clearly seen as leading community education related activities, with Regional Councils (36.8%) also seen as a major player.

- It is noteworthy that no respondents viewed CAs as leading community education activities to date.
- This perception of CAs by councils is a significant observation and raises the question as to why CAs are not playing a greater role in leading community outreach and awareness activities.
- The open-ended comments included: "... MRC has been leading the charge but others have contributed sporadically; our collection of e-waste is not part of the NTCRS; Local Tidy Towns Committee is a leader ..."

A combined majority of respondents (71%) noted that overall performance of community education activities was either Limited, showed Scope for improvement or was Very poor.

- Over a fifth of respondents (21.1%) felt that overall performance of community education activities was Non-existent. Only 15.8% of respondents felt that community education activities were Adequate, and no respondents believed that activities were Comprehensive.
- These figures raise concerns as to the commitment of CAs to effective community education and awareness activities during a critical establishment phase of the NTCRS.
- The open-ended comments included: "... there are different partners operating in the region, each with different logos and messages. I think it is confusing for consumers. I think e-waste recycling should be the priority above brand recognition of the partners; needs further expansion of collection locations for higher frequency of services; All education and awareness is provided by local governments ..."



Improving the roll-out of the NTCRS in WA

FEEDBACK	LOCAL or REGIONAL COUNCIL
Ban e-waste from landfill and from bulk verge collections	Mindarie Regional Council
Have clearly identified and conveniently located collection points distributed throughout the community.	Mindarie Regional Council
Coordinated advertising campaign, encouraging people to dispose of their e-waste correctly and take it to any registered site, not limited to a specific collection partner	Mindarie Regional Council
Provide a recycling service regardless of location from metro area	Shire of Augusta – Margaret River
More advertising; and more assistance with communications and promotions	Shire of Manjimup
Ensure rural communities have the same opportunities as metropolitan areas	Shire of Augusta – Margaret River
Allow every council to have at least one collection point. Residents do not want to travel to a neighbouring council over 50km away to drop off their e-waste. Many councils want the facility but have been denied it.	Wellington Regional Waste Group
Provide advertising material that allows for all e-waste to be collected at the centre. Currently all material says that other forms of e-waste are not accepted- we do accept it and pay separately for the recycling of non-NTCRS e-waste.	Wellington Regional Waste Group
Very happy to date with the system. We are aware of problems in some regions of Australia with stockpiles of unprocessed e-waste, and we hope this situation will not arise in our area. We are not aware that this is a problem in WA yet.	City of Busselton
Covering the cost of collection and freight to recycling premises	City of Albany
Sort out transport issue so there is no cost to the local government.	Shire of Boddington
Bump up the percentage of materials to be collected so that our e-waste is collected.	Shire of Boddington
Increase the products covered and reduce the cost of the program on Councils and Regional Councils	Town of Cambridge
More advertising. Better communication from company organising the collection.	Shire of Plantagenet
The system is working very well from our experience.	Shire of Dardanup

Other issues and comments regarding the roll-out of the NTCRS in WA

FEEDBACK	LOCAL or REGIONAL COUNCIL
MRC have felt the need to just promote recycling of ALL electrical goods, they bring it in and we sort it where it needs to go. Consumers are confused as to what e-waste is or what computers and peripherals are. Messaging is far easier and more effective if you don't have a long list of things you can't take.	Mindarie Regional Council
Coordinated messaging, one logo/message Australia wide.	Mindarie Regional Council
Community based dismantling centres should be encouraged especially for products not yet in the scheme	City of Armadale
Better local enforceable requirements to require collection and approved disposal options easily accessible.	City of Kwinana
Cost of transport. Very city focused	Shire of Boddington
Need an improved collection service. Communication and information has been very poor. Our emails and phone calls are not returned. We have no idea when collection is to happen and the 3 times it has been attempted, the vehicle sent to collect the TV's has been inadequate.	Shire of Plantagenet
Initial Contracts provided by the Arrangements were unacceptable, written in lawyer's jargon and shifted risk and responsibility to local government. Perhaps WALGA could design a standard contract that would be more appropriate.	Rivers Regional Council
All councils eligible to have at least one collection centre with all of their costs paid for.	Wellington Regional Waste Group
Allowance for staff wages to pack the e-waste into the containers. Comprehensive training for staff handling e-waste on why it is recycled and how. Tours of e-waste recycling facilities included in the training so they have a comprehensive knowledge of the process.	Wellington Regional Waste Group
Advertising information available for councils that collect all forms of e-waste to use - the current advertising material shows that non-NTCRS products are not accepted, which is not correct in many council areas.	Wellington Regional Waste Group
Councils have to pay for the costs of collecting e-waste that is left on the verge after verge collections.	Wellington Regional Waste Group
Education, education, education about why e-waste is so bad and what can be done about it. An ad with a theme of mining the TV or computer for precious metals and hazardous materials would be effective - images of a huge open cut gold mine and a pile of computers and TVs that show the equivalent amount of soil that has to be moved to get the same amount of material out.	Wellington Regional Waste Group

3. SUMMARY OF ISSUES

3.1 Emerging Issues and Dynamics Nationwide

From a strictly quantitative viewpoint, the first year of the NTCRS has been successful. A total of 40,813 tonnes of recycling was achieved, and approximately twice the estimated level of e-waste recycled prior to the NTCRS's introduction. Similarly a total of 635 collection services were provided by ANZRP TechCollect, DHL DropZone and Ecycle Solutions. These figures represent a significant achievement and involved a multi-million dollar investment by the CAs and their members (Liable Parties).

It is inevitable that during the establishment phase of such a large multi-stakeholder collection and recycling initiative that 'teething problems' will emerge, especially given the relatively rapid national roll-out of the NTCRS. It is vital that this establishment phase be observed with care and caution in order to underscore the successful aspects and design-out the problematic or under-performing features. The first year of the NTCRS allows all stakeholders to learn from experience and ensure that all necessary adjustments and amendments are considered and adopted in a considered manner.

The following list of issues are grouped under five distinct but often inter-connected themes:

- Implementation and Regulatory Issues (very significant presenting multiple barriers)
- Market and Material Issues (very significant presenting multiple barriers)
- Cost and Financial Flows (very significant presenting multiple barriers)
- Community Awareness and Engagement (significant presenting some barriers)
- Contract Issues (noteworthy presenting some barriers)

Of all the above issues, there are particularly significant areas in need of adjustment, correction and improvement. These relate to the need for higher scheme targets than those specified to date, and the absence of any State-based targets which in turn result in disincentives to collect higher volumes in WA.

In summary, there are major Implementation and Regulatory issues, which could be effectively addressed by the Commonwealth Regulator via regulatory amendments in order for the NTCRS to reach its full potential across WA. The current situation of 'easy to achieve' collection targets, present little if any clear incentive for CAs to improve their collection performance in WA or other locations where the cost of transport is a deciding factor.

3.2 Implementation and Regulatory Issues

- The recycling target is a national figure that is not further apportioned into any specific allocation per state or territory. Provided the overall target is met by the NTCRS there is no compulsion for any of the CAs to collect a minimum volume of TV/IT waste in any one State or Territory. This has resulted in WA being underrepresented in volume collected in year one of the scheme.
- There is a widespread perception that the Regulations and NTCRS operations are not being adequately monitored. More specifically, some stakeholders believe that the Commonwealth Regulator's presence in WA is inadequate.
- Concern by some stakeholders (eg. CAs and recyclers) that the Commonwealth Regulator is 'too friendly' with the CAs at the cost of impartial monitoring and 'policing' of the Regulations.
- Concern by some stakeholders that the Commonwealth Regulator is detached from how the NTCRS is being implemented and operationalised on-the-ground in WA.
- Continuing anecdotal chatter about questionable recycling practices despite no known official or publicly disclosed breach of the Regulations.
- A perception that the level of on-the-ground interaction between CAs and WA stakeholders is not sufficiently frequent.

- No visible action by, or evidence of the Regulator to encourage, push or direct CAs to work more collaboratively on specific issues eg. community awareness, improved services in remote and regional areas.
- The product scope of the NTCRS is also a common issue identified by several stakeholders, and that a more coherent definition of e-waste should be adopted by NTCRS to deal with other common household electrical and electronic products i.e. TV peripherals such as VCR players, DVD players, set-top boxes, audio and hi-fi equipment, microwave ovens, vacuum cleaners, small appliances and other domestic and consumer electronics etc.
- The role of Standards and how they were used (and audited) by the CAs and the recycling providers they procured to deliver transport, storage and recycling services.

3.3 Market and Material Issues

- TV/IT waste is being lost to landfill because of verge or hardwaste collections.
- The absence of any in-State processing capabilities or infrastructure for CRT glass involves additional transport costs to have the material processed/recycled in the eastern States.
- Stringent regulatory and compliance requirements to export CRT glass from Perth to overseas countries for processing can be costly, time consuming and not always possible under the Commonwealth Hazardous Waste (Regulation of Exports and Imports) Act 1989.
- CAs are competing fiercely for Liable Parties to join their particular Arrangement and this leads to a price war between CAs to offer the lowest membership fees and charges. Inherent in this process is the need for CAs to source competitive pricing from service providers such as recyclers.
- In the process to offer low cost 'recycling' rates, there is the risk of inferior practices being adopted to cut corners and offer price reductions. This in turn has the potential to result in illegal dumping, low material recovery outcomes, misleading or false claims to CAs and their members as to what happens to collected product in reality versus marketing claim.
- The pros and cons of 'trading volume' and buying evidence or Certificates of Recycling rather than investing directly in expanding the NTCRS and providing additional collection services in regional and remote Australia. On the positive side, such 'volume trading' can serve to help respective CAs balance material flows and ensure compliance. In contrast, volume trading may be treated as an efficient way of achieving compliance, without CAs more directly investing in improved community awareness or increased drop-off locations and events.
- The NTCRS does not require CAs to collect and recycle 'out of scope' or non-regulated e-waste eg. DVD and VCR players, audio equipment or microwaves. Councils and recyclers often refer to this as 'by-catch'. The low economic value of these types of e-waste means there is little if any voluntary activity (from CAs) to ensure their recovery and recycling unless it is funded by individual councils. Some councils and recyclers estimate the by-catch to be around 5% of total material being collected and recycled.
- Continuing anecdotal chatter about inferior or questionable recycling practices despite no known official breach of the Regulations.

The issue of volume trading by CAs deserves further attention and careful monitoring to ensure that the core objectives of the NTCRS are maintained and not undermined. Volume trading or purchasing of Certificates of Recycling is a well known activity in the EU under the WEEE Directive, and there is 'chatter' or anecdotal evidence that it has already commenced in Australia under the NTCRS.

The benefits of volume trading are relative depending on the desired intent of the transaction. In other words, there are advantages and disadvantages associated with the process. For example, the trading of volume helps under-performing CAs to ensure compliance by simply purchasing TV/IT waste evidence from over-performing CAs or from recyclers. This is a benefit to CAs that are struggling to meet their regulated targets through their own direct community awareness and collection activities. There are also benefits associated with such transactions helping to smooth out material flows to meet the overall NTCRS target.

The potential disadvantages of volume trading can result in CAs being driven by efficient trading of evidence rather than investment that seeks to address the core objectives of the NTCRS. For example, a CA may spend less to secure the same volume by buying volume rather than through providing additional collection services and activating effective community awareness and education initiatives.

The market will remain a volatile space while the collection targets are relatively low and easily achieved by CAs. The glut of CRT glass and the limited market for this material, in part, compound this. There is recent evidence indicating that Australian e-waste recyclers are advertising CRT glass for sale on various online retail and trading sites (such as alibaba.com). These same recyclers are also participants in the NTCRS, and therefore the obvious question is whether these activities are connected and to what extent the CAs are ensuring robust auditing of their downstream markets.

Many of these market issues arise from fierce competition between five CAs who are effectively competing for Liable Parties in order to maintain and maximise their competitive advantage. This new competitive landscape stimulated by the NTCRS is showing evidence of positive cost cutting efficiencies, as well as the potential for perverse outcomes such as inferior resource recovery practices, and trading of surplus volumes.

3.4 Cost and Financial Flows

- The high cost of collecting volume outside of metropolitan Perth creates a major disincentive for some CAs to effectively provide a regular or permanent collection service in outer regional and remote WA. In their own words they can more cheaply secure volume in other locations in the Eastern States at less cost. From a regulatory perspective this currently places WA at a disadvantage in terms of the CAs equitably investing and delivering collection services across WA in a timely manner.
- The cost of transport and logistics in WA appears to be a major factor affecting the ability of more local councils participating in the NTCRS, particularly those councils with smaller populations located in regional and remote parts of the State. This has a direct impact on the extent to which CAs choose to establish collection services in non-metropolitan areas.
- The challenges and difficulties confronting Social Enterprises either excluded from the NTCRS on price, or having services withdrawn as a result of CAs no longer requiring their services.
- A future issue for WA may be the refusal and reluctance of some CAs to collect and recycle any volume over and above the total liability of their members even when the TV/IT waste has been collected and consolidated at council sites ready for subsequent processing and recycling; this may impact negatively on WA where the cost of CAs securing volume is higher than in other locations in Australia.

3.5 Community Awareness and Engagement

- Several councils mentioned the need to have a consistent message to the community about e-waste collection and recycling rather than one, limited to only TV/IT waste which is driven by competition between CAs and is limited to only TV/IT waste. In short, the Regulations are seen as deficient on the basis that the product scope is unnecessarily constrained rather than meeting community and council expectations.
- The importance of a consistent, uncomplicated message to the community nationwide; what has been done and what is planned.

3.6 Contract Issues

- Challenges and difficulties confronting local councils and regional waste groups in relation to formal contracts and agreements issued by CAs in order to engage and include local government in their respective Arrangements.
- Withdrawal of collection services from some councils and social enterprises by CAs because they've over collected during 2012-13, and informal or 'one-sided' agreements work in favour of CAs easily withdrawing their services and funding. This has been particularly pronounced in NSW and Queensland.

4. POTENTIAL INTERVENTIONS

Extracting increased value from the NTCRS is an important objective for the WA Government and other relevant stakeholders, including local and regional councils.

The NTCRS provides an unprecedented opportunity for all levels of government to work collaboratively and productively in pursuit of diverting TV/IT waste from landfill and maximising resource recovery opportunities.

After a full year of operation during 2012-13, there are several areas in need of adjustment, expansion or corrective action. These are grouped below as Options and Interventions under six themes. They are proposed for consideration as a means of addressing the issues or concerns raised during this study.

4.1 Dialogue and Collaboration

- Initiate more direct and regular communication between relevant WA agencies and the NTCRS Regulator.
- Relevant WA agencies to advocate for more regular and transparent reporting from the Regulator about NTCRS performance in WA.
- Initiate more direct and regular communication between relevant WA agencies and the respective CAs.
- More specifically, relevant WA agencies should invite all the CAs to Western Australia for a planning workshop to hear from each of the CAs and their plans for continuing to rollout the NTCRS across metropolitan, regional and remote WA.
- Request and support the Regulator to encourage, push or direct CAs to work more collaboratively on specific issues such as:
 - Harmonised and well developed/deployed community information and education activities
 - Shared approach to providing collections services in regional and remote areas
 - Shared approach to, and co-investment in dealing with problem materials and future processing eg. plastics containing brominated flame retardants
 - Shared approach to, and co-investment in creating, expanding or improving processing capabilities and infrastructure i.e. explicit funding by CAs in supporting industry development activities
 - Shared approach to, and co-investment in nationally consistent community awareness and education activities – one scheme – one community – one message

4.2 Implementation and Regulatory Issues

- Investigate options with the Regulator to increase the overall scheme collection target over and above the existing trajectory. This would assist with minimising the risk of 'surplus to compliance' stockpiles. This would require activities aimed at amending the regulations.
- Investigate options with the Regulator that would allow the recycling target to be apportioned for each State therefore removing disincentives for minimal action in WA. This would require activities aimed at amending the regulations.
- Identify municipalities that are not serviced through the NTCRS with a view to working collaboratively to identify solutions for future inclusion in the NTCRS.
- Relevant WA stakeholders to liaise more closely with WMAA to understand the current stockpile issues being addressed in the eastern states.
- Relevant WA agencies to ensure monitoring and enforcement of NTCRS collection sites and recycling operations within the context of WA legislation, regulations, licensing and permitting.
- Investigate options with the Regulator that would allow the scope of TV/IT waste collected under the NTCRS to be expanded to capture TV peripherals.
- Relevant WA agencies to advocate for more regular and transparent monitoring and enforcement of the regulations in WA.

4.3 Market and Material Issues

- Relevant WA agencies to work with local and regional councils to assess how TV/IT waste currently lost to landfill through verge collections, could be collected and recycled under the NTCRS.
- Relevant WA agencies to assess the cost-benefit of supporting the establishment of in-State processing capabilities and infrastructure
- Relevant WA agencies to monitor performance of the NTCRS after the first 12 months of the Material Recovery Target being in place to assess impact on market and associated materials issues.
- Relevant WA agencies to consider supporting the collection and recycling of non-regulated or 'out of scope' e-waste as means of improving overall relevance of the NTCRS to local and regional councils.

4.4 Cost and Financial Flows

- Relevant WA stakeholders to explore the possibility of CAs funding outer regional and remote councils to design cost effective pre-treatment, logistics and transport solutions that result in more collection services being activated outside of metropolitan Perth.
- Relevant WA agencies to assess the benefits of directly supporting or subsidising the collection of TV/IT waste from regional and remote areas that can be channelled into the existing CAs drop off locations and events.
- Investigate options with the Regulator that would allow the recycling target to be apportioned for each State therefore removing disincentives for minimal action in WA. This would require activities aimed at amending the regulations but may result in increased activity by CAs in remote and regional locations.

4.5 Community Awareness and Engagement

- Relevant WA stakeholders to encourage all CAs to fund and conduct effective and impactful community education activities to help increase awareness and behaviour change in relation to responsible disposal of TV/IT waste.
- Relevant WA stakeholders to work with the Regulator and the CAs to ensure consistent and harmonised community messaging about the NTCRS as opposed to the current differentiated branding of different CAs.
- Relevant WA agencies to promote the NTCRS to other relevant State departments and agencies (eg. Education, Local Government and Communities, Regional Development), with a view to ensuring that collection services are being promoted as widely as possible through existing government channels.

4.6 Contract Issues

- Relevant WA stakeholders to review all existing agreements to identify opportunities for improvement that deliver benefit to local and regional councils across WA.
- Relevant WA stakeholders to fund the development of equitable proforma (template) agreements for use between local councils and CAs.

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