



**Australian Government**  
**Department of the Environment**

# **National Television and Computer Recycling Scheme**

## **Outcomes 2012–13**

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## EXECUTIVE SUMMARY

- **40,813 tonnes of e-waste were recycled**
- **635 collection services were provided around Australia**
- **131 TV and computer importers and manufacturers were liable: all met their obligation to participate in the scheme**

The National Television and Computer Recycling Scheme requires the television and computer industries to fund collection and recycling of a proportion of the televisions and computers disposed of in Australia each year. The scheme's long-term goals include the diversion of potentially hazardous television and computer waste from landfill, an increase in the recovery of useable materials and greater access to recycling for communities across Australia.

The scheme's design includes a stepped implementation over a number of years, with industry taking responsibility for a progressively higher proportion of total waste televisions and computers each year, from 30 per cent in 2012–13 to 80 per cent by 2021–2022. Television and computer waste beyond these targets remains the responsibility of state, territory and local governments.

Companies importing or manufacturing over a specified threshold of television or computer products are liable under the scheme and must join and fund an approved co-regulatory arrangement to provide collection and recycling services on their behalf. All liable parties met their obligation to join a co-regulatory arrangement in 2012–13.

Three approved co-regulatory arrangements were operational in 2012–13: DHL Supply Chain (Australia) Pty Limited, Australia and New Zealand Recycling Platform Limited (ANZRP) and E-Cycle Solutions Pty Ltd.

A total of 635 collection services, including drop off points at major electronics retailers and local government and other waste facilities, as well as temporary collection events, were provided by the three co-regulatory arrangements between the commencement of the Scheme and the end of June 2013.

An estimated total of 137,756 tonnes of televisions and computers reached end of life in Australia in 2012–13. Industry's target under the scheme was to recycle 30 per cent of this amount, or 41,327 tonnes. A total of 40,813 tonnes of recycling was achieved, equivalent to 98.8 per cent of the scheme target and almost double the estimated level of recycling prior to the scheme's introduction. DHL Supply Chain and E-Cycle Solutions exceeded their recycling targets, while ANZRP fell short of its recycling target. E-waste not covered by the scheme target remained the responsibility of state, territory and local governments. National data is not available on the amount of e-waste recycling that occurred outside the scheme in 2012–13.

# **BACKGROUND**

## **Developing the National Television and Computer Recycling Scheme**

In 2007–08 it was estimated that around 106,000 tonnes of televisions, computers and computer products (including printers, scanners, keyboards and mice) reached end-of-life in Australia. This annual figure represents approximately five kilograms of television and computer waste generated per capita. At that time, it was estimated that only 10 per cent of these products were recycled, with the remainder either stockpiled or sent to landfill. The amount of waste arising annually was also increasing due to rapid technological change, shorter life-spans of products and increasing ownership of electrical products. The weight of televisions and computers reaching their end-of-life was projected to grow to 181,000 tonnes by 2027–28.

Waste management is primarily the responsibility of state and territory governments and, through them, local governments. The involvement of the Australian Government has arisen through the Council of Australian Governments (COAG), in response to the scope of the growing e-waste challenge and the desire of industry, the community and state and territory governments for a more consistent national approach to recycling.

Australian environment ministers agreed in 2009 that televisions and computers should be the first products to be regulated under the proposed national legislative framework for product stewardship. Product stewardship is an approach that acknowledges that those involved in producing, importing, selling, using and disposing of products have a shared responsibility to reduce the impact that those products and their use and disposal have on the environment and human health and safety.

The decision to implement a product stewardship scheme for televisions and computers was informed by a thorough analysis of the impact of a national regulated recycling scheme. This analysis demonstrated that an industry run and funded recycling scheme for televisions and computers would provide a significant net benefit to society over the period from 2008–09 to 2030–31.

The design of the National Television and Computer Recycling Scheme was endorsed through COAG. A key design feature is that the television and computer industries will take on increasing proportion of the responsibility for managing television and computer waste over a number of years. In endorsing the design, COAG recognised that continued recycling of waste computers and televisions by state, territory and local governments would be needed in support of industry's efforts in the early years of the scheme.

## **Consultation and stakeholder engagement**

In July 2009, a consultation package was released on options for a national recycling scheme for televisions and computers, and public consultation sessions were held in Adelaide, Perth, Sydney and Melbourne. A total of 130 submissions were received from a broad range of stakeholders including television and computer manufacturers, industry associations, state and territory governments, local governments, environmental organisations and individuals. Submissions provided almost unanimous support for the introduction of a national scheme for television and computer recycling, underpinned by Australian Government regulation.

To inform the operational aspects of the Scheme, the Australian Government established a Stakeholder Reference Group of representatives from the television, computer and recycling industries, environmental and community groups and state, territory and local governments. Between

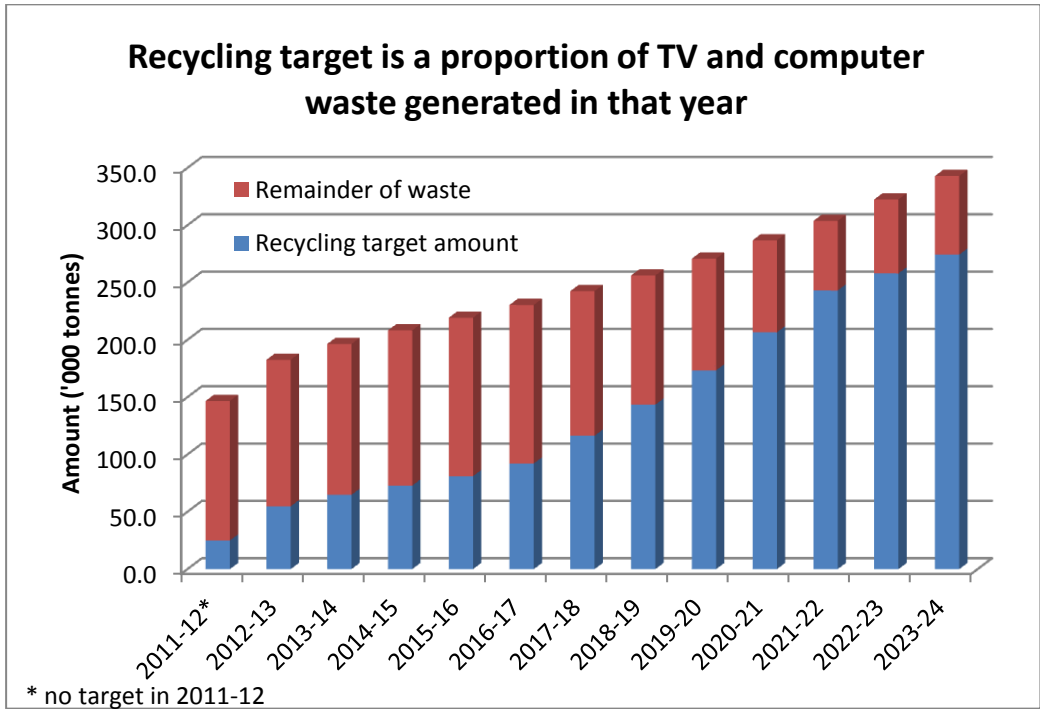
May 2010 and May 2012, the Stakeholder Reference Group facilitated engagement between key stakeholders and the government on the development and implementation of regulations for television and computer recycling.

Recognising the vital role that state, territory and local governments would continue to play a role in managing waste televisions and computers, COAG endorsed a project aimed at improving understanding of the ongoing roles and responsibilities of these entities. The Australian Government also undertook a national program of facilitated discussion sessions with local government, recyclers and charities. A total of 360 councils, representing 84 per cent of Australia’s population, took part in these sessions.

In order to assist with managing community expectations relating to demand for television and computer recycling, local governments were provided tailored communications and educational material on the scheme. The Australian Government also wrote to the mayors of all councils to provide information on the expected rollout timeframes, and to reiterate the importance of local governments continuing to recycle televisions and computers falling outside the scheme’s targets in its early years of operation.

This work was informed by a number of studies, which are available on the Department’s website at <http://www.environment.gov.au/resource/national-waste-policy-publications-and-resources#research-ps> . Figure 1, below, was developed from data in a July 2011 report by Meta Economics Consulting Group and was included in communications material during the implementation of the scheme. It illustrates the incremental increase in industry-funded recycling under the scheme, represented by the blue bars, while the amount of e-waste to be managed outside the scheme will remain high in the early years before decreasing incrementally.

**Figure 1: Projection of waste arising from 2011–12 to 2023–24, showing the proportions covered and not covered by the scheme’s annual recycling targets**



## Implementing the scheme

The *Product Stewardship Act 2011* commenced in August 2011 and provides a legislative framework for national product stewardship schemes. The passage of the legislation delivered on a key commitment by the Australian Government under the National Waste Policy which was endorsed by COAG in August 2010.

The *Product Stewardship (Televisions and Computers) Regulations* were made in November 2011, establishing the National Television and Computer Recycling Scheme. The regulations require all importers and manufacturers of above threshold volumes of televisions and computers to join and fund an approved co-regulatory arrangement. Co-regulatory arrangements are responsible for meeting the scheme's outcomes on behalf of their members.

The Regulations require industry to fund collection and recycling services to meet progressively increasing annual recycling targets, set as a proportion of the estimated total television and computer waste arising in Australia. These targets start at 30 per cent in 2012–13 and increase to 80 per cent by 2021–22.

Each approved co-regulatory arrangement is required to achieve a portion of the total scheme recycling target, based on the import or manufacture share of its members. Each co-regulatory arrangement is also required to provide access to recycling services for communities across metropolitan, regional and rural Australia, in line with metrics described in the Regulations. Arrangements must meet these metrics by December 2013 or within 12 months of being approved, whichever is later.

Organisations applying to establish co-regulatory arrangements are assessed by the Department, and are required to demonstrate capacity to achieve collection and recycling outcomes, address environmental, health and safety matters, and administer governance arrangements for liable importers and manufacturers.

Three co-regulatory arrangements were operating in 2012–13, having been approved in early 2012. The administrators of the three approved co-regulatory arrangements in 2012–13 were, in order of the dates of their approvals:

DHL Supply Chain (Australia) Pty Limited

Australian & New Zealand Recycling Platform Limited (ANZRP)

E-Cycle Solutions Pty Ltd

A further two co-regulatory arrangements were approved in early 2013 to commence operation in 2013–14, administered by, in order of the dates of their approvals:

Electronics Product Stewardship Australasia

Reverse E-Waste

To provide consistent environmental guidance for the e-waste recycling industry, the Australian Government supported Standards Australia to develop Australian Standard 5377:2013 'Collection, storage, transport and treatment of end-of-life electrical and electronic equipment'. This standard was

finalised and published in February 2013 and will be implemented under the scheme over time, setting a benchmark for sound handling of waste under the scheme.

### **Implementation feedback and regulation amendments**

The Australian Government has actively monitored and sought feedback on the implementation of the Scheme. In April 2013 the Department released a discussion paper outlining potential opportunities to improve the scheme, based on experience and feedback received throughout the first year of operations. Following consultation, amendments were made to the scheme, including:

- moving to a single target for all products covered by the scheme, where previously separate targets had been set for televisions and computers
- updating the scheme's product codes to align with changes made to Australia's Customs Tariff Classifications
- changes to enable co-regulatory arrangements to better manage financial risk

These changes are in effect in the scheme's second target year. The Department has continued to consult with scheme participants to ensure that lessons learned in its delivery can inform its operational settings.



# SCHEME OUTCOMES 2012–13

Information on schemes outcomes included in this report is drawn from information in annual reports provided by DHL Supply Chain, ANZRP and E-Cycle Solutions on their activities from the commencement of the scheme to the end of June 2013, which are available on the Department’s website.

## Recycling of televisions and computers

• <b>Total waste arising 2012–13:</b>	<b>137,756 tonnes</b>
• <b>Total scheme recycling target 2012–13:</b>	<b>41,327 tonnes</b>
• <b>Total scheme recycling 2012–13:</b>	<b>40,813 tonnes</b>

The scheme requires industry to meet increasing television and computer recycling targets, increasing from 30 per cent in 2012–13 to 80 per cent in 2021–22. Each approved co-regulatory arrangement is required to achieve a portion of the total scheme recycling target, based on the import or manufacture share of its members. Scheme recycling targets have been set as a percentage of the waste estimated to be generated in a given year.

In 2012–13 an estimated 137,756 tonnes of televisions and computers reached end-of-life in Australia. This was calculated from the average converted weight of the previous three years’ total imports and manufacturing of televisions and computers, multiplied by a scaling factor of 0.9. The total converted weight of all television and computers imported or manufactured in Australia was 156,696 tonnes in 2009–10, 159,165 tonnes in 2010–11 and 143,324 tonnes in 2011–12.

The total scheme recycling target in 2012–13 was 30 per cent of total waste arising, or 41,327 tonnes of waste televisions and computers.

A total of 40,813 tonnes of televisions and computers were recycled under the Scheme in 2012–13, equivalent to 98.8 per cent of the annual recycling target. This represents nearly a doubling of annual recycling of televisions and computers in Australia prior to the commencement of the scheme, which was estimated at around 21,200 tonnes in 2009–10. Management of e-waste falling outside industry’s 30 per cent recycling target remained the responsibility of state, territory and local governments. National data is not available on the amount of e-waste recycling that occurred outside the Scheme in 2012–13.

The rate of recycling under the scheme increased throughout the financial year as approved co-regulatory arrangements established collection services and entered into contracts with recycling service providers. A significant proportion of the annual recycling was undertaken in the final quarter of 2012–13, representing the drive of arrangements to achieve their recycling targets by 30 June.



## Performance of co-regulatory arrangements against recycling targets

- Three approved co-regulatory arrangements were operating in 2012–13
- DHL Supply Chain exceeded its total recycling target by 4,348 tonnes
- ANZRP fell short of its total recycling target by 5,239 tonnes
- E-Cycle Solutions exceeded its recycling target by 377 tonnes

Data on the performance of the three arrangements against their 2012–13 recycling targets are given in Table 1, below.

DHL Supply Chain met its separate recycling targets for televisions and computers in 2012–13 and will carry over total excess recycling of 4,348 tonnes, which may be acquitted against future targets.

ANZRP exceeded its televisions recycling target but fell short of its computer recycling target and will carry forward a net shortfall of 5,239 tonnes to be added to its 2013–14 recycling target.

E-Cycle Solutions exceed its televisions recycling target by 377 tonnes and will carry this amount forward for acquittal against future targets. E-Cycle Solutions did not have a recycling target for computers in 2012–13.

**Table 1: Co-regulatory arrangements' performance against 2012–13 recycling targets\***

	Televisions (tonnes)		Computers (tonnes)		Televisions and computers (tonnes)		Carry over (tonnes)
	Target	Recycled	Target	Recycled	Target	Recycled	
<b>DHL Supply Chain</b>	13,548	15,868	4,683	6,711	18,231	22,579	4,348
<b>ANZRP</b>	2,467	5,215	18,987	10,999	21,454	16,215	-5,239
<b>E-Cycle Solutions</b>	1,642	2,019	NA	NA**	1,642	2,019	377
<b>Total</b>	17,657	23,103	23,670	17,710	41,327	40,813	NA

\*All figures are rounded to the nearest tonne

\*\*Recycling of 335 tonnes of computers reported by E-Cycle Solutions for 2012–13 has been excluded from scheme data because E-Cycle did not have a recycling target for computers

## Provision of e-waste collection services

- A total of 635 collection services were provided under the Scheme in 2012-13

Each co-regulatory arrangement is required to provide access to collection services for waste televisions and computers to communities across metropolitan, regional and rural Australia, in line with metrics described in the Regulations. 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 collection events. Householders and small businesses must not be charged for the collection of televisions, computers and computer products under a co-regulatory arrangement.

The scheme's first collection services were established in the ACT by DHL Supply Chain in May 2012. By the end of 2012–13, collection points had been established at many local government waste facilities, other transfer stations and recycling facilities and at a number of major electronics retailers. The total number of collection services provided by the three co-regulatory arrangements in each state and territory is given in Table 2, below.

**Table 2: Scheme collection services and weight of products collected to end June 2013 in each state and territory**

State/Territory	Number of services provided	Total collected weight (tonnes)*
Australian Capital Territory	7	3,279.25
New South Wales	165	10,584.93
Northern Territory	4	4.44
Queensland	105	3,175.22
South Australia	53	4,759.96
Tasmania	21	280.95
Victoria	229	9,290.57
Western Australia	51	811.07
<b>Total</b>	<b>635</b>	<b>31,186.39</b>

\* Excludes waste collected by co-regulatory arrangements and liable parties through channels other than scheme collection services

The total weights of waste televisions and computers collected at scheme collection services in each state and territory are also given in Table 2. The weight of waste collected through scheme collection services was less than the total weight of waste recycled under the scheme, as recycling under the co-regulatory arrangements also included recycling undertaken by members of the arrangements (i.e. television and computer importers) of waste televisions and computers collected through channels other than scheme collection services.

DHL Supply Chain, ANZRP and E-Cycle 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 2013 is given in their annual reports, which are available on the Department's website.

Electronics Product Stewardship Australasia and Reverse E-Waste, which were approved to commence operating in 2013–14, are required to deliver reasonable access to collection services to communities in metropolitan, regional and remote Australia by 4 April 2014 and 25 June 2014 respectively, which is twelve months after their approvals were given.

### **Participation of television and computer importers and manufacturers**

- **131 television and computer importers and manufacturers were liable in 2012–13**
- **100 per cent of liable parties complied with their obligations to join a co-regulatory arrangement in 2012-13**

Companies importing or manufacturing over a specified threshold of television or computer products are liable under the scheme. In 2012–13, the scheme Regulations specified liability thresholds for two product classifications, 'televisions', and 'computers, printers and computer products'. These thresholds are:

- for televisions: 5,000 units of televisions
- for computers, printers or computer products: 5,000 units of computers or printers, or 15,000 units of computer parts or peripherals

Importers or manufacturers that exceeded one of these thresholds were required to join and fund an approved co-regulatory arrangement, which undertook collection and recycling services on their behalf. Liability in 2012–13 was determined by the number of products imported and manufactured in 2011–12.

A total of 131 companies were identified as liable in 2012–13. These companies imported or manufactured a total of 136,608 tonnes of televisions and computers in 2011–12, which was 95.3 per cent of the total televisions and computers imported or manufactured in Australia that year. One hundred per cent of these liable importers and manufacturers met their obligations under the scheme to join an approved co-regulatory arrangement in 2012–13.

### **Material recovery**

Recycling processes result in the separation of a range of commodities and components that are sent for further processing into useable materials. In addition, there are normally small amounts of unusable or low-value materials are separated and disposed, often to landfill. Material recovery refers to the proportion of material that is sent for further processing into useable materials.

The Scheme sets a minimum material recovery rate of 90 per cent, to be met from 2014–15, in order to minimise the amount of television and computer material that is disposed of to landfill and maximise the recovery of resources. This target comes into effect from July 2014, to provide time for

consistent measurement and reporting methodologies to be developed and standardised across arrangements and recyclers.

DHL Supply Chain, ANZRP and E-Cycle Solutions included information on material recovery rates in their 2012–13 reports. Based on this information, in 2012–13, the overall material recovery rate based on co-regulatory arrangement reporting was approximately 92 per cent. DHL Supply Chain and ANZRP both reported material recovery rates in excess of 90 per cent, while E-Cycle Solutions reported a lower rate. Further information is given in the arrangements' annual reports, available on the Department's website.

## **THE SCHEME'S SECOND TARGET YEAR: 2013–14**

The National Television and Computer Recycling Scheme is continuing to roll out across Australia. As indicated under *Provision of e-waste collection services* above, three of the five approved co-regulatory arrangements were required to provide access to recycling services across areas metropolitan, regional and remote Australia, in line with metrics specified in the Regulations. The remaining two arrangements are required to deliver reasonable access within twelve months of their approval. Following these initial deadlines, each arrangement must continue to provide collection each financial year to communities in metropolitan and regional areas of Australia and every two years to communities in remote areas.

Although analysis of import data is not yet finalised, television and computer waste arising for 2013–14 is likely to be around 131,000 tonnes. This will be calculated from the average converted weight of the previous three years' total imports and manufacturing of televisions and computers, multiplied by a scaling factor of 0.9. The total converted weight of all television and computers imported or manufactured in Australia was 159,165 tonnes in 2010–11, 143,324 tonnes in 2011–12 and around 136,000 tonnes in 2012–13.

The scheme target in 2013–14 will be 33 per cent of the total waste arising. Total recycling under the scheme in 2013–14, taking into account the 33 per cent target and the effect on arrangements' recycling targets of carrying over excess recycling and a recycling shortfall, is expected to be around 44,000 tonnes.

Initial data provided by co-regulatory arrangements indicates that between 23,000 and 24,000 tonnes of televisions and computers were recycled under the scheme in the first half of 2013–14, putting the scheme on track to exceed its overall recycling target, although, as in 2013–14, there is disparity in the performance of arrangements against their individual targets. As industry achieves its target over the course of the year, it will be important that this effort is supported by the continuation of recycling by state, territory and local governments of waste televisions and computers falling outside industry's target under the scheme.