Case study for the OECD Working Party on Resource Productivity and Waste:

The Australian National Television and Computer Recycling Scheme

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EXECUTIVE SUMMARY

This case study discusses the development and roll-out of the National Television and Computer Recycling Product Stewardship scheme in Australia. The purpose of this case study is to provide a summary of the National Television and Computer Scheme, its achievements and how the Australian context has impacted on its development and implementation.

In Australia increased waste generation is a growing challenge for governments at all levels due to the costs associated with waste management. There has been increasing momentum for industry to take more responsibility for these costs.

The National Television and Computer Recycling Scheme (the 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 long-term goals of the scheme include the diversion of potentially hazardous television and computer waste from landfill, an increase in the recovery of usable 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 television and computer products each year.

The *National Waste Policy: Less waste, more resources* is a coordinated and environmentally responsible approach to waste management in Australia. The *National Waste Policy* sets a comprehensive agenda for national and co-ordinated action on waste and marks a fundamental shift in the national approach to waste management and waste resource recovery. The *National Waste Policy* was endorsed by the Australian Government, and state, territory and local governments in 2009. The policy identifies key areas of focus for all governments to pursue. Product stewardship was identified as one of these areas which lead to the development of the *Product Stewardship Act 2011* (the Act), with end-of-life televisions and computers identified as the first products to be regulated under the Act.

The Act provides a national framework to support voluntary, co-regulatory and mandatory product stewardship schemes. The Act defines product stewardship as an approach to reducing the environmental impact and other impacts of products by encouraging or requiring manufacturers, importers, distributors and other persons to take responsibility for these products. The *National Waste Policy* identifies product stewardship, also known as extended producer responsibility, as an approach to managing the impacts that end-of-life products have on the environment and human health. It recognised that all those involved with producing, selling, using and disposing of products have a shared responsibility to reduce the impact of these products throughout their lifecycle.

The scheme commenced in May 2012 with industry funded recycling services gradually becoming available around Australia. The scheme accepts all televisions, computers, printers and computer peripheral products (such as keyboards, mice and hard drives) for recycling. The Australian Government led the development of the scheme across all levels of government and with industry stakeholders.

Early monitoring of the scheme has shown a significant increase in the volume of e-waste being recycled in Australia. An estimated total of 137,756 tonnes of televisions and computers reached end-of-life in Australia in 2012-13. Industry's recycling target under the scheme was to recycle 30 per cent of this amount. In the first target year of the scheme, 40,813 tonnes of waste televisions and computers were recycled, equivalent to 98.8 per cent of the scheme

target, this is almost double the level of recycling prior to the scheme's implementation. The recycling targets as a proportion of the waste arising each year for the scheme will increase as the scheme expands and the capacity of the recycling industry grows.

BACKGROUND

The Australian Context

In Australia responsibility for environmental policy and waste management is shared across three levels of government (Commonwealth, state and territory and local). The Australian Government is responsible for ensuring Australia meets its international waste obligations and coordinates national action, including reporting and the development of national policies.

The responsibility for waste management falls predominately to state, territory and local governments. A common issue identified in developing the *National Waste Policy* was the lack of a cohesive national approach to many aspects of waste and resource management, including product stewardship.

The *National Waste Policy* recognises that generation of waste in Australia is increasing. This is driven by population and economic growth and changing patterns of consumption. The *National Waste Policy* plays an important role in addressing the challenges of waste generation through product stewardship and other initiatives.

The *National Waste Policy* was agreed to by the Australian, state and territory environment Ministers in November 2009 and sets Australia's waste management and resource recovery direction and identifies key areas for collaborative efforts to 2020. The *National Waste Policy* built on existing efforts by the national, state and territory governments.

During the consultation process for the *National Waste Policy* there was wide support for national product stewardship. At the time there were a number of voluntary schemes with no legislative basis in place and the potential for consistent and complete coverage across Australia had not been fully addressed. Industry and other stakeholders had sought government regulatory support in a number of cases including the regulation of televisions and computers.

Televisions and computers were identified as the first products to be regulated under the proposed product stewardship legislation. These products were prioritised as they were a growing waste stream with a low recycling rate, contain hazardous substances such as lead, bromine, mercury and zinc, and contain valuable non-renewable resources that can be recovered, including precious metals.

The Australian, state and territory environment Ministers agreed in 2009 on the establishment of national product stewardship legislation. This saw the development of the *Product Stewardship Act 2011* (the Act), which allows for (mandatory, co-regulatory or voluntary) product stewardship approaches. The different approaches of the product stewardship framework allow product stewardship schemes to be designed to suit the product and industry.

The National Television and Computer Recycling Scheme (the scheme) was the first scheme under the Act. It is a co-regulatory scheme, where the Australian Government implemented and now regulates the scheme and industry funds the scheme. The requirements and outcomes of the scheme are specified in the *Product Stewardship (Televisions and*

Computers) Regulations 2011 (the Regulations). The Regulations commenced on 8 November 2011 and specify which television and computer products are covered by the scheme and who is responsible for product stewardship (liable parties).

HOW DOES THE SCHEME WORK?

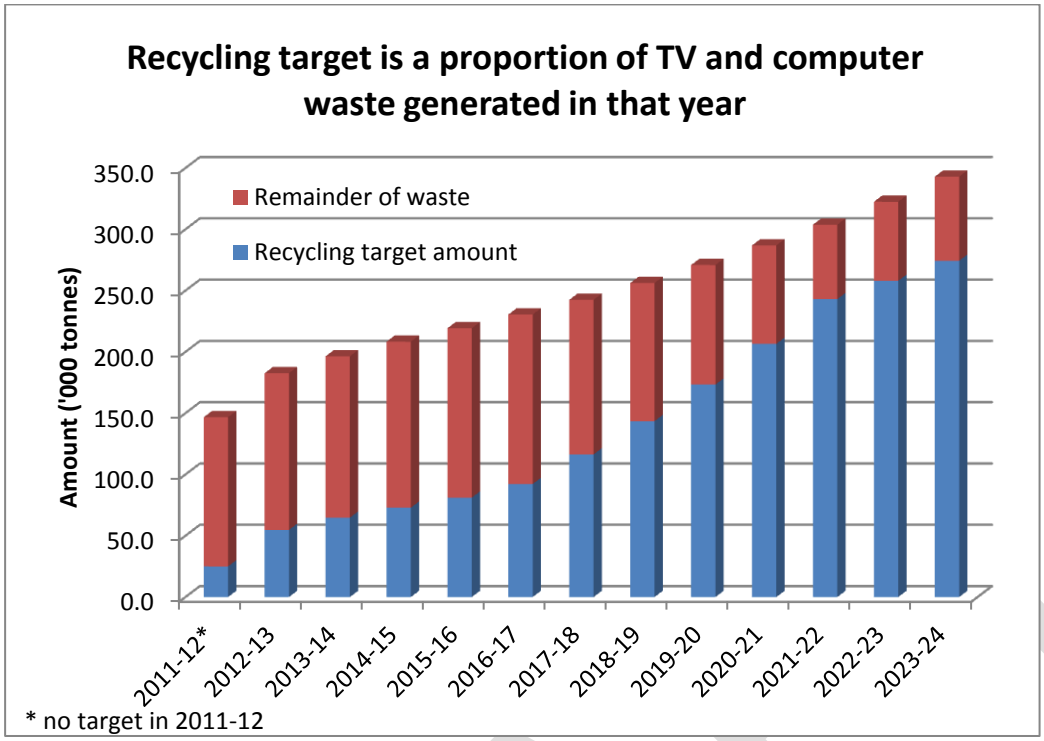
The scheme requires manufacturers and importers of televisions and computers to fund the collection and recycling of a portion of the televisions and computers disposed of in Australia each year. Through the scheme, recycling services are provided free of charge to householders and small businesses that drop-off televisions, computers and computer products at industry-provided recycling services, which include permanent collection sites, take-back events or mail-back options. Collection points also include electrical retailers, local government and other waste facilities.

Companies importing or manufacturing television or computer products over a specified threshold are liable under the scheme and must join and fund an approved co-regulatory arrangement to provide collection and recycling services on their behalf. Those who import or manufacture volumes under the threshold, generally small businesses, are not required to participate in the scheme.

The Australian Government administers the scheme. State, territory and local governments retain responsibility for waste disposal and are responsible for waste management outside of the scheme. Industry efforts to manage a proportion of e-waste do not reduce the constitutional responsibility that the states and territories retain for waste management. State and territory environment Ministers committed to maintaining their efforts to mange e-waste outside of the scheme, which support industry efforts to establish a national scheme.

The targets for recycling increase progressively each year and are set as a percentage of the waste estimated to be generated per annum. The industry recycling targets under the scheme are designed to increase slowly from 30 per cent to 80 per cent. A material recovery target of 90 per cent commences on 1 July 2014.

Projection of waste arising from 2011-12 to 2023-24, showing the proportions covered and not covered by the scheme's annual recycling targets



DEVELOPMENT OF THE PRODUCT STEWARDSHIP LEGISLATION

In Australia, waste management and resource recovery are areas that the *National Waste Policy* identified as warranting collaboration between the Australian and state and territory governments. Product Stewardship is one of 16 interrelated strategies under the *National Waste Policy* designed to address the challenge of achieving less waste and more resources. Product stewardship is an important tool for managing the environmental, health and safety foot print of manufactured products and materials, including end-of-life products. It is one of many approaches to dealing with waste and resource recovery and it is important to choose the right tool for each problem.

A key focus of the Australian Government in relation to the strategies set out in the *National Waste Policy* is finding efficient and effective ways to prevent hazardous waste from entering the environment. The management and disposal of hazardous waste was a significant issue in the development of the product stewardship legislation

The Australian Government has responsibilities arising from a number of international agreements. Relevant agreements include: the Basel Convention on the Control of Trans boundary Movements of Hazardous Waste and their Disposal; and the Stockholm Convention on Persistent Organic Pollutants. Commonwealth legislation had been passed to address some of these international obligations. However, there was a need to ensure that waste management in Australia remained in line with our international obligations and could continue to evolve over time.

In the case of product stewardship for television and computers the Australian Government led the development of the scheme because the import and manufacture of televisions and computer operates as a national market. The states and territories could not implement similar

schemes beyond their borders or without risking fragmented outcomes in each state. End-of-life televisions and computers contain valuable resources and hazardous waste and it was not efficient or effective for end-of-life televisions and computers to be dealt with at the local level by state, territory and local governments.

The Regulation Impact Statement for the *National Waste Policy* indicated that if states were to pursue their own product stewardship schemes then the extra cost to the economy would be up to $212 million above business-as-usual over 20 years while a national approach for products operating in a national market would offer a significant saving.

In July 2009, an initial public consultation package on options for a national television and computer recycling scheme was released. Submissions were received in response from a broad range of stakeholders including television and computer manufacturers, industry associations, state and territory governments, local governments, environmental organisations and individuals. Consultation showed widespread support for the introduction of a single national scheme for televisions and computers, underpinned by Australian Government regulation.

Design Features of the Product Stewardship Legislation

The *National Waste Policy* and consultation with stakeholders identified the need for a nationally consistent approach to product stewardship for products such as end-of-life televisions and computers. The Act came into effect in August 2011. The legislation provided a framework to effectively manage the environmental, health and safety impacts of products including impacts associated with their disposal.

The product stewardship legislation is an enabling framework covering key matters such as the criteria that make a product suitable for coverage by the legislation and how obligations are created and applied to different entities, as well as provisions for offences, penalties, monitoring, auditing and reporting.

Flexibility was a key design principle of the product stewardship legislation. Each product and industry is unique and so the product stewardship legislation is flexible to allow different arrangements to be tailored to suite different circumstances. To avoid having multiple pieces of legislation which apply to single products across different levels of government, the product stewardship legislation allows for products to be added over time following a rigorous assessment process. So that there is flexibility within the parameters of the legislation, specific detail about a product or industry is not included in the principle legislation, which can be costly and time consuming to amend, but is set out in subordinate legislation called regulations.

The design feature of flexibility also needed to be balanced with transparency of decision making. This is particularly relevant when balancing the benefits and costs of regulating a new product or industry. Before a product or industry can be regulated a rigorous and transparent assessment process must occur. There must be a clearly identified reason for government to intervene. The product stewardship legislation established a threshold to ensure that it only applies to products that are sufficiently significant to justify regulation.

The legislation allows for the development of product-specific regulations for mandatory and co-regulatory product stewardship schemes and government accreditation for voluntary

product stewardship programs. The three different approaches mean product stewardship schemes can be purpose designed to address particular end-of-life and waste products.

The objectives of the legislation are to:

- reduce the impact that products have on the environment, throughout their life cycle
- reduce the impact that substances contained in products have on the environment, and on the health and safety of human beings, throughout the lives of those products
- contribute to Australia meeting its international obligations concerning the impacts referred to in the above two matters, and
- contribute to reducing the amount of greenhouse gases emitted, energy used and water consumed in connection with products and waste

As mentioned above, the legislation sets out three different approaches to take into account market factors and impacts on the environment and human health and safety. The three approaches are outlined below:

Mandatory: The legislation provides for mandatory product stewardship where both the requirements and the outcomes are prescribed in regulations. Regulations for mandatory product stewardship may place legal obligation on parties to take certain actions in relation to a product. These obligations could include labelling of products, restriction of hazardous content or requiring a deposit and refund to be applied to a product.

There are currently no mandatory product stewardship schemes in place in Australia.

Co-regulatory: Co-regulatory product stewardship schemes are delivered by industry and regulated by government. The exact requirements and details of the scheme requirements are detailed separately in regulations. These requirements may include the need to avoid, reduce or eliminate waste from products, and may specify recycling targets. Industry has some flexibility in how it meets these requirements.

The National Television and Computer Recycling Scheme is the first co-regulatory scheme established under the Act.

Voluntary: The legislation provides for organisations to seek accreditation for voluntary product stewardship arrangements that meet specified requirements. The purpose of voluntary accreditation is to provide an avenue for encouraging and recognising industry initiated product stewardship and to provide assurance to the community that an arrangement is operating to achieve its stated outcomes. Accredited arrangements will be permitted to use the Australian Government logo created for the purpose.

Other product stewardship schemes in Australia

FluoroCycle

The Australian Government collaborated with Lighting Council Australia (LCA) to develop the voluntary product stewardship scheme FluoroCycle for the recycling of mercury-containing lamps. The scheme commenced operations on 21 July 2010 and was delivered jointly by the LCA and the Australian Government, on behalf of state and territory environment Ministers.

FluoroCycle is a national, voluntary scheme to reduce the amount of mercury-containing waste being disposed of to landfill by increasing the recycling of mercury-containing lamps from the commercial and public lighting sectors. These sectors account for a large majority of all lighting waste. FluoroCycle gives public recognition to businesses and organisations that participate and commit to recycle their waste lamps or to promote the scheme.

FluoroCycle participants contract existing collection services and recycling infrastructure for waste mercury-containing lamps.

The FluoroCycle scheme successfully transitioned to any industry funded and run arrangement from July 2013, and Lighting Council Australia is seeking accreditation for the scheme under the voluntary provisions of the *Product Stewardship Act 2011*.

DEVELOPMENT OF THE NATIONAL TELEVISION AND COMPUTER RECYCLING SCHEME

Australians have growing purchasing power, including for electrical and electronic goods, leading to more complex and potentially hazardous waste streams emerging. E-waste is also increasing due to rapid technological change, shorter life-span of products and increasing ownership of electrical products across the population. This contributed to an increase in the volume of waste, particularly e-waste prior to the commencement of the scheme which was going to landfill. At the same time, Australians increasingly desire better quality environmental protection and recycling options.

The Australian Government conducted extensive stakeholder consultation over a number of years to inform the development of the scheme. Initial consultation was undertaken between governments and key stakeholders from 2006-2009 to help form a view on the possible impacts of the scheme, key design features and policy options.

In Australia a decision to undertake a regulatory approach must be informed by a Regulatory Impact Statement (RIS). The RIS considers different policy options for regulation and includes analysis of the costs and benefits of each policy option. Before regulation can be introduced the RIS must demonstrate a benefit to the community. A Decision RIS was prepared in 2009 as part of the development of the product stewardship scheme for television and computer recycling.

The Decision RIS highlighted a number of problems associated with the low recycling rate for television and computer products, including:

- **Failure to conserve non-renewable resources:** e-waste contains embedded non-renewable resources that can be recycled but are lost when disposed to landfill.
- **Failure to leverage community willingness to recycle:** An independent survey of Australians indicated that respondents would be willing to pay for a guaranteed increase in the recycling rate of non-renewable resources in televisions and computers.

- **Need for full industry participation to reduce free rider problem:** Previous trials of television and computer recycling schemes had generally been successful because the program had financial support provided by government. While there was support from stakeholders to establish a recycling scheme, they were unprepared to implement a scheme without full industry participation to avoid the problem of free-riders.
- **Costs and risks associated with landfill:** Land filling of television and computer products present risks and costs because of the hazardous substances they contain.
- **International obligations:** As signatories to *The Basel Convention on the Control of the Trans boundary Movement of Hazardous Waste And Their Disposal* and *The Stockholm Convention on Persistent Organic Pollutants*, Australia is required among other things to ensure the generation of hazardous waste and other wastes is reduced to a minimum.

The Decision RIS identified a number of different models for how a product stewardship scheme could operate. The options included a business-as-usual approach, co-regulatory and mandatory arrangements. The models included different funding options between industry and government and state-based or national approaches.

The analysis from the Decision RIS considered a number of key issues in shaping which product stewardship scheme model would best meet the needs of government and stakeholders and would ultimately be implemented. These included: net benefit to the community, time taken to establish the regulatory instrument, simplicity of government administration and acceptability to key stakeholders and the broader community. The Decision RIS identified the option of an Australian Government co-regulatory extended producer responsibility scheme as being the best option. The proposed co-regulatory model was supported by industry and all levels of government. The cost benefit analysis undertaken as part of the Decision RIS showed that a national co-regulatory recycling scheme for televisions and computers would provide a net benefit to society in the range of $517 million to $742 million over the period 2008-09 to 2030-21.

The Australian Government was able to establish legislation to implement the scheme and national administration meant the costs to deliver the scheme were lower. A consistent national approach to product stewardship for televisions and computers offered cost savings and would prevent any adverse impacts that result from inconsistencies across state and territory borders

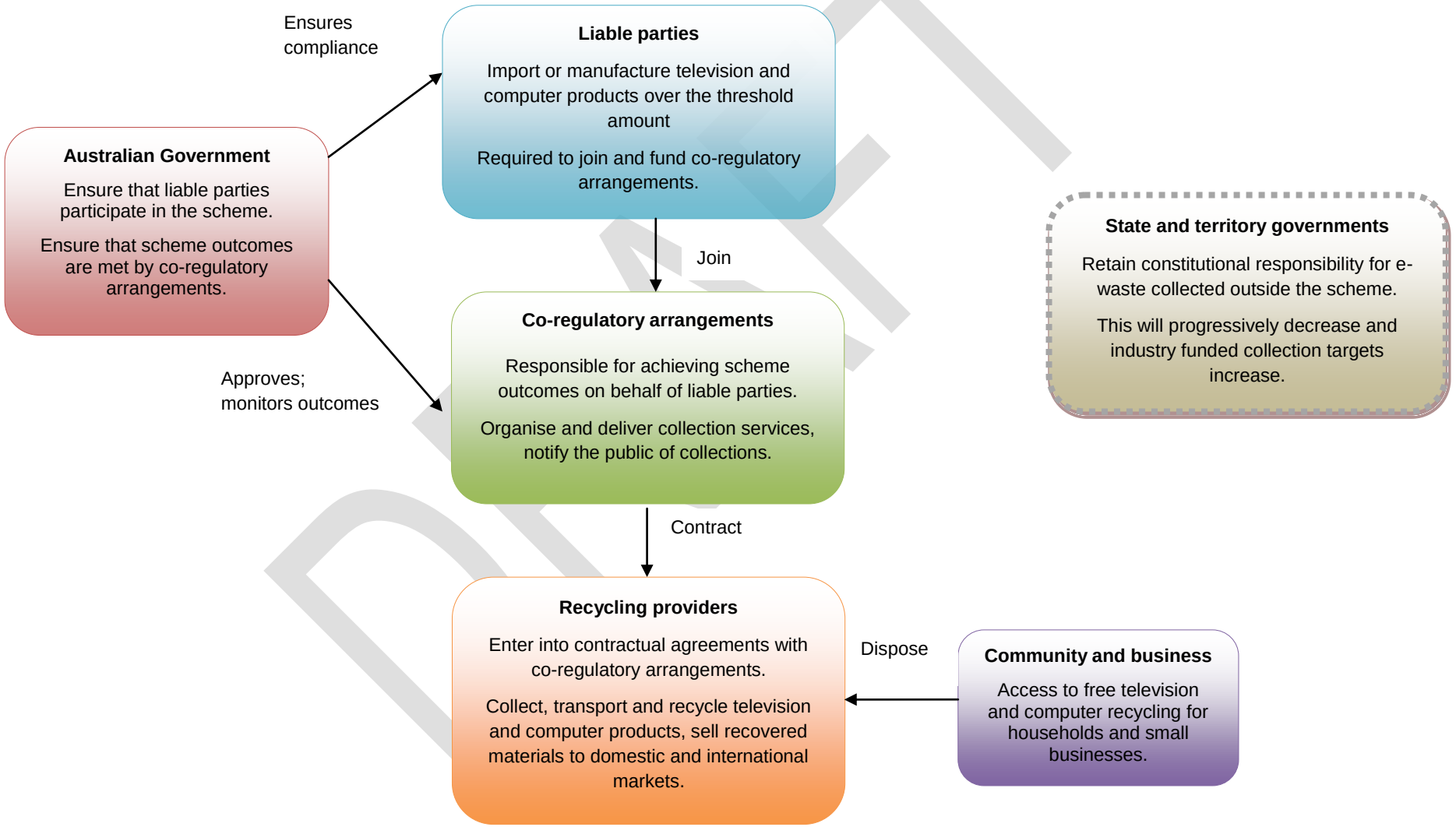
It was projected that the scheme would result in a substantial increase in the recycling rate of televisions and computers which would impact on the recycling industry and its capacity. Research reports were commissioned to consider existing and projected future e-waste recycling infrastructure and capacity in Australia.

Once the product stewardship approach was agreed to, a working group was established to inform the operational aspects of the scheme. The working group included government and industry representatives and considered implementation and operational issues and how the scheme would meet community expectations.

The department prepared draft regulations for a scheme and a public consultation paper on the draft regulations was released in March 2011. Submissions received gave broad in-principle support for the regulations and also identified areas to enhance and refine the proposed regulations.

SCHEME ROLES AND RESPONSIBILITIES

Roles, responsibilities and relationships of the National Television and Computer Recycling Scheme.



Australian Government: The Australian Government was responsible for implementing the product stewardship legislation. This included developing the initial policy design for the scheme and then working with states and territories and collaborating with stakeholders on their behalf. The Australian Government continued working with co-regulatory arrangements and other stakeholders during the roll-out of the scheme.

The Australian Government has responsibility for regulation of the scheme which includes ongoing compliance activities and communication with liable parties and co-regulatory arrangements about the scheme and their responsibilities. On-going compliance means those identified as liable parties meet their financial obligations under the scheme and co-regulatory arrangements meet their outcomes as required by the Regulations, including the collection and material recovery targets for end-of-life televisions and computers. The co-regulatory arrangements report to the Australian Government, with the Australian Government reporting directly to the Minister for the Environment about progress against scheme outcomes.

Importers and Manufactures (liable parties): The liable parties are the importers of televisions, computers and computer peripherals and domestic manufacturers of televisions, computers and computer peripherals. Australia has very minimal domestic manufacture of those products. A liable party which imports or manufactures items over a specified threshold volume is required to join and fund a co-regulatory arrangement. The threshold which identifies liable parties is set out in the Regulations. The Australian Government identifies liable parties based on information provided by the Australian Customs and Boarder Protection Service which monitors the import of goods into Australia. The thresholds mean that small businesses which do not import large numbers of televisions or computers into Australia are not liable parties to the scheme.

Co-regulatory Arrangements: Co-regulatory arrangements undertake collection and provide recycling on behalf of liable parties. Co-regulatory arrangements must apply to the government for accreditation. In order for a co-regulatory arrangement to be approved the proposed administrator of the arrangement must be able to demonstrate that the arrangement is technically and financially capable of delivering services and fulfilling the requirements of the scheme. Co-regulatory arrangements are required to meet recycling targets on behalf of the liable parties.

There is no limit on the number of co-regulatory arrangements that can be approved to operate as part of the scheme. Australian businesses operate in a competitive market. The operation of the scheme encourages competition in the recycling market and allows any organisation that is able to provide collection and recycling services to apply for approval. Arrangements may choose to contract out collection, logistics or recycling services to a third party. The Government does not intervene in determining which organisations may be contracted to work with a co-regulatory arrangement.

Three organisations were approved to establish co-regulatory arrangements under the scheme in 2011-12. At the end of June 2013, 635 collection services were provided nationally by the three co-regulatory arrangements. A further two co-regulatory arrangements were approved in 2012-13

Service Providers and Recyclers: The service providers or recyclers often work under contract with the co-regulatory arrangement and work ‘on the ground’ to collect, transport, process and recycle end-of-life televisions and computers.

State, Territory and Local Governments: State and territory governments retain their constitutional responsibility for regulating waste and recycling. State and territory governments manage approval and licensing conditions for waste collection and recycling infrastructure, and have regulatory functions in relation to work health and safety, environmental protection and consumer protection laws.

State, territory and local governments retain responsibility for all waste disposal, even as industry takes more responsibility for end-of-life televisions and computers. They are responsible for waste collected outside of the scheme. Local governments have historically been responsible for providing householders with access to waste disposal and recycling services in Australia, and play an important role in promoting waste minimisation and public awareness of recycling. Local governments also manage a large number of waste transfer stations in Australia. For this reason, many local governments also act as service providers for product stewardship schemes. To date over 200 local governments have partnered with a co-regulatory arrangement to provide services under the scheme.

Community and Business: Householders and small businesses access recycling services for televisions and computers for free under the scheme. Television and computer recycling can be accessed via permanent recycling services such as at a recycling or transfer station, or through a periodic take-back event or a mail-back service. The co-regulatory arrangements are responsible for ensuring the community has reasonable access to collection services in metropolitan, regional and remote areas of Australia, with reasonable access based on the geographical distribution of the population.

OPERATION OF THE SCHEME

Waste Arising

Annual scheme recycling targets are set as a percentage of the total 'waste arising' in a given year. The Regulations include a formula for calculating waste arising, which provides an estimate of the total volume of televisions and computers available for recycling in Australia each year. The waste arising formula is based on the average weight of imports over the past three years, to reduce the impact of annual fluctuations in imports. This figure is then multiplied by a scaling factor of 0.9, which operates on the proposition that the majority of imported television and computer products are purchased to replace another product, which then enters the waste stream.

The liability of importers and manufacturers is determined by the product codes assigned to their imported products. The product codes are aligned with the tariff and statistical codes used by the Australian Customs and Border Protection Service (Customs) and the Australian Bureau of Statistics (ABS) to identify imported products. Each product code has an associated conversion factor, which is an estimated average weight of that product type.

The purpose of this conversion factor is to approximately align the data collected by Customs, which is calculated in number of units imported, with the measurement metrics used by the recycling industry, which are calculated in weight of items recycled. Converting product data from numerical imports to weighted products helps provide more consistent and meaningful information to inform recycling targets.

As technological advances occur in the television and computer manufacturing industries, it is recognised that average weights of products will change periodically. To address these changes, the department monitors the accuracy of the conversion factors over time. For

example, amendments to the Regulations occurred on 1 July 2013, which updated conversion factors from 1 July 2012 to more accurately reflect the average weights of products imported under the scheme.

Communication about the scheme

Consumer education was an important part of the roll-out of the scheme. Recognising that the scheme would take time to roll-out across Australia, a project was commissioned to communicate the purpose of the scheme and effectively manage demand for services during roll-out.

Recognising that state, territory and local governments would continue to have responsibility for managing waste televisions and computers collected outside of the scheme, the Australian Government developed a comprehensive stakeholder engagement strategy that commenced prior to the scheme to manage stakeholder expectations. The stakeholder engagement process was thorough, reaching all local governments, recyclers, social enterprises, the electronics industry and others in the e-waste supply chain. A total of 360 local governments representing 84 per cent of Australia's population, took part in the engagement sessions.

Co-regulatory arrangement administrators are responsible for communicating details of collection services to the public, including how these services can be accessed (where and when they will occur) and what items will be accepted.

Non-Compliance

Liable parties that do not meet their obligation to join a co-regulatory arrangement can be issued with civil penalties. Ongoing, deliberate or negligent non-compliance can lead to senior management liability (i.e. civil penalties against the Chief Executive Officer), or injunctions (such as restraining injunctions against business activities) where other approaches have failed. Financial penalties for liable parties can be up to the maximum benefit that the party has gained by not joining an arrangement, equivalent to the cost that would have been charged to join an approved co-regulatory arrangement.

Some of the outcomes set out in the Regulations relate to co-regulatory arrangements meeting the annual recycling targets of the scheme. Co-regulatory arrangements must make all reasonable efforts to meet the recycling targets. The Act provides for additional actions to be taken should a co-regulatory arrangement fail to meet one of the required outcomes of the scheme. These actions can result in an improvement notice being issued to the co-regulatory arrangement or as a last resort the co-regulatory arrangement's authority to deliver e-waste collection and recycling services under the scheme can be cancelled.

Health and Safety

The Australian Government has worked with scheme stakeholders, particularly co-regulatory arrangements, on establishing consistency for the environmental and health and safety outcomes of the scheme. Under the scheme, all co-regulatory arrangements are required to adequately deliver environmental and workplace health and safety outcomes.

Standards Australia is a non-government organisation that works with government and industry to meet Australia's need for internationally aligned standards and related services and publishes specifications and procedures designed to ensure products, services and systems are safe, consistent and reliable. Following the commencement of the scheme Standards Australia worked with the department to develop Australia-New Zealand Standard 5377:2013

‘Collection, storage, transport and treatment of end-of-life electrical and electronic equipment’ (Standard 5377). The purpose of Standard 5377 is to specify requirements for the safe and environmentally sound collection, storage, transport and treatment of end-of-life electrical equipment. Application of this standard will maximise re-use and material recovery in the recycling process, reduce or eliminate the amount of waste going to landfill, safeguard the health of industry workers and minimise potential harm to the environment.

THE AUSTRALIAN RECYCLING INDUSTRY

Both the not-for-profit sector and private industry are active in the waste and recycling sector in Australia. Recycling and waste management activities are not just restricted to recycling companies; many companies that are significant contributors to the waste and recycling industry may also undertake other activities such as logistics and manufacturing. Key stakeholders and participants in the waste and recycling industry include all three levels of government, regional waste management groups, industry associations, private companies and environmental groups.

As expected the commencement of the scheme has stimulated competition in the e-waste recycling industry in Australia. As the industry grows stakeholders including co-regulatory arrangements and recyclers have formed partnerships to take advantage of the expanding industry and increased recycling activity. In addition to developing and growing local recycling capability, some parts of the industry are specialising in particular areas of resource recovery and recycling. Anecdotally some co-regulatory arrangements are recognising and working with recycling companies to deliver more effective recovery of particular resources.

Recycling processes result in the separation of a range of commodities and components that are sent for further processing into usable materials. There are also small amounts of unusable or low-value materials that are separated and disposed of, often to landfill.

The material recovery target of 90 per cent will commence from 1 July 2014. This material recovery target refers to the proportion of television and computer by-products to be sent after recycling for processing into useable products and materials. This target is a mechanism designed to achieve a reduction in the post-recycling materials which are sent to landfill, and increase the quality of recycling. Anecdotally, the current performance of recycling providers generally exceeds 90 per cent. However, the practices of some individual e-waste recycling providers may need to be improved to ensure this standard is consistently met from July 2014.

WHAT IS THE CURRENT STATE OF POLICY IMPLEMENTATION?

The scheme is the largest extended producer responsibility program operating in Australia. Data and other indicators received since the Regulations came into effect have confirmed that the scheme settings are generally appropriate and the implementation has progressed as planned.

It was anticipated that the roll-out would identify further opportunities to fine tune and enhance the scheme. The Australian Government has engaged with industry and community stakeholders in order to monitor the implementation of the scheme. Consultation and regular communication with stakeholders throughout the development and implementation of the scheme have ensured that industry, service providers and consumers have been able to adapt to the introduction of the scheme and the impact it has had on the recycling industry.

Following the scheme's introduction, the response from the television and computer industry has been positive. All liable importers and manufacturers met their obligation to join a co-regulatory arrangement in 2011–12 and 2012–13. Recycling points or services offering ongoing drop off points have been established in every state and territory in Australia.

The scheme recycling target in 2012-13 was 30 per cent of the total waste arising, 41,327 tonnes of waste televisions and computers. In the first year of the scheme, 40,813 tonnes of television and computer waste was recycled, equivalent to 98.8 per cent of the scheme target and nearly double the volume of television and computer recycling per annum prior to the implementation of the scheme. It is important to note that this e-waste would have most likely gone to landfill if the scheme was not in operation. The rate of recycling under the scheme increased throughout the financial year as co-regulatory arrangements established collection services and entered into contracts with recycling service providers. A significant proportion of recycling was undertaken in the final quarter of the 2012-13 year representing the drive of the co-regulatory arrangements to achieve their recycling targets by the end of the target year.

Adaptive Management: Current and Future Policy Settings

An important consideration when implementing and rolling out the scheme was to make sure that policy settings continue to be current and appropriate. The department has worked with stakeholders on issues such as monitoring import and manufacturing capacity trends and the development of the e-waste industry over time.

Feedback from the co-regulatory arrangements and other stakeholders has highlighted areas for review. This includes co-regulatory arrangement's capacity to manage risk and alignment of the scheme's e-waste collection activities more closely with community expectations. The community's requirement for e-waste recycling services impacts directly on the e-waste available to meet the scheme's recycling targets. During consultation about the development of the scheme collection targets were one of many issues discussed. It was agreed that separate collection targets would be set in the Regulations for televisions and computer products. Early monitoring of the scheme indicated that community's requirement for recycling under the scheme had been primarily for televisions.

The need to recycle televisions and computers in different proportions than the proportions in which the public offers them for recycling presented a challenge to co-regulatory arrangements. The co-regulatory arrangements would need to emphasise the collection of some products while finding a way to restrict collection of others, despite the legislation stopping co-regulatory arrangements from refusing collection of any covered product based on product type. Also, there is no significant difference in the environmental benefits of recycling different ratios of televisions and computers. The materials included in televisions and computers are largely the same, and most hazardous materials in electronic waste are found in both televisions and computers.

It was proposed that the scheme's co-regulatory arrangements be given greater flexibility to align their e-waste collection to the community's requirement for e-waste recycling. The creation of one product class covering televisions, computers and computer products, meant any of these products offered for recycling by the public count towards a single recycling target. Amendments to the Regulations were made in 2013 to introduce a single target.

Television and computer manufacturing industries continuously innovate, improve technologies and make new products available to consumers. This can cause variations in both the applicable product codes and the conversion factors which assign an estimated

weight to each product type. Scheme product codes and conversion factors will be subject to ongoing assessment and consideration, including an industry survey of products and weights every 2–3 years to inform further amendments.

SUMMARY OF KEY ACHIEVEMENTS

The data and key achievements that are attributable to the scheme are outlined below:

Data and Key Achievements National Television and Computer Recycling Scheme

- Total waste arising for the 2012-13 year 137,756 tonnes.
- Scheme recycling target for the 2012-13 year 41,327 tonnes.
- Total scheme recycling for the 2012-13 year 40,813 tonnes, equivalent to 98.8 per cent of the scheme target.
- Kilograms collected per capita; approximately 1.78kg in 2012-13.
- The roll-out of the scheme has seen a reduction in the volume of e-waste and hazardous material going to landfill and increased recovery of valuable non-renewable resources.
- The recycling industry is adapting and expanding to meet the requirements of the scheme. There have been new opportunities and challenges for e-waste recyclers.
- Importers, manufacturers and the community have an increased awareness of, and are taking greater responsibility for, the environmental impacts of products. State, Territory and Local Governments will continue to have responsibility of the proportion of e-waste not covered by scheme industry targets.
- The roll-out of recycling services through metropolitan, regional and rural areas of Australia has resulted in greater access to recycling services for Australian communities and small businesses. The scheme has also improved the availability of information available about e-waste recycling.