

Department of Sustainability, Environment, Water, Population and Communities

Thresholds for the proposed television and computer
recycling scheme: Including analysis of indicative funding
model scenarios

Final Report

June 2011



Disclaimer

This Report has been prepared for the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC), which announced the change of its name from the Department of the Environment, Water, Heritage and the Arts (DEWHA) on 14 September 2010.

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This report has undergone a number of iterations in line with changes in scope requested by DSEWPaC. These iterations have reflected the evolving consideration of the development of the Product Stewardship Legislation. Conclusions in this report reflect PwC's understanding (at the date of finalisation in late June 2011) of how the Government intends the legislative framework to operate. Should the actual operation differ from our understanding then our conclusions may no longer hold.

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Acronyms

AIIA	Australian Information Industry Association
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACS	Australian Customs and Border Protection Service
ATO	Australian Taxation Office
CBA	Cost Benefit Analysis
CPU	Central Processing Unit
DCCEE	Department of Climate Change and Energy Efficiency
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
EPHC	Environment Protection and Heritage Council
FOB	Free on board
MFD	Multi-function Device
NPV	Net present value
OBPR	Office of Best Practice Regulation
PSO	Product Stewardship Organisation
PSA	Product Stewardship Australia
RIS	Regulatory Impact Statement
TEU	Twenty-foot Equivalent Unit
VDU	Visual Display Unit

Executive summary

In late 2009, the Australian Government ('the Government') endorsed the establishment of a national television and computer collection and recycling scheme ('the Scheme'). It is our understanding that this scheme will require participation of television and computer manufacturers/importers ('liable parties')¹ in contributing to collection and recycling outcomes. Liable parties will be required to meet the obligations of the Scheme by being part of an Approved Arrangement.²

As part of the endorsed scheme, the Government agreed to a threshold exemption of 5,000 imported units,³ applying to all television and computer tariff codes (see Appendix C). A cost benefit analysis (CBA) undertaken as part of the Decision Regulatory Impact Statement (RIS) illustrated that this threshold delivered the largest net benefit to society while maintaining coverage of more than 95% of televisions and computers imported into Australia.

This analysis, however, was based on an assumption that industry would comply with requirements of the scheme with no 'gaming'⁴ to avoid obligations. Also, the analysis did not consider the size of the businesses affected and hence did not consider the relative impact of such an exemption on the compliance costs of firms.

In light of this, and at the request of the television and computer industry associations, the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) has been asked to consider the appropriateness of a 5,000 unit import threshold for exempting an importer or a manufacturer from the Scheme.

Following this request, DSEWPaC engaged PwC to prepare this analysis on thresholds for the Scheme. This analysis focuses on imports

¹ The consultation paper on proposed regulations for the Scheme defines a liable party as 'the importer or local manufacturer of televisions, computers or computer peripherals to which the obligations and requirements established under the Scheme apply.' Use of the term liable party presupposes the existence of a threshold, but for the purposes of this analysis these terms are used interchangeably. See Department of Sustainability, Environment, Water, Population and Communities (2011) *National Television and Computer Product Stewardship Scheme – Consultation Paper on Proposed Regulations*, March, p 34.

² The consultation paper on proposed regulations for the Scheme defines an Arrangement as '[a] set of measures that are implemented in order to meet the product stewardship obligations and requirements of a liable party or group of liable parties under the legislation. The details of an Arrangement will need to be submitted to the Regulator for approval prior to implementation and each Arrangement will need to nominate an administrator.' See DSEWPaC (2011) *National Television and Computer Product Stewardship Scheme – Consultation Paper on Proposed Regulations*, March, p 33.

³ Any reference to importers alone reflects the fact that there is currently no domestic manufacture of televisions and computers.

⁴ Any threshold may encourage importers to structure themselves or to try to 'game' their activities to be below the threshold by either setting up multiple companies to import below the threshold, setting up new companies and winding them up before making payments, using contracts and other importers or misrepresenting the number of units that they are importing.

of televisions and computers given that there is currently no domestic manufacture, although domestic manufacturers are liable parties under the proposed regulations.⁵ This report also includes an analysis of the impact of indicative funding model scenarios on threshold recommendations.

In this regard, the analysis should be viewed as representing a small number of possible outcomes (scenarios if you will) where the true impact will depend on the actual funding method(s) for recycling, the number of Approved Arrangements, and the specific regulatory obligations on liable parties and Approved Arrangements. As such, the purpose of this paper is not to determine which funding model is optimal but rather to assist with policy considerations in setting a threshold(s) for liable parties.

As a general statement, the implementation of new or amended regulations has the potential to impact consumers, businesses and government. A threshold provides an exemption to regulatory requirements to reduce the administrative cost on businesses (or individuals) for which the activity may be small or peripheral and the cost of compliance is disproportionately high. It also reduces costs to government since it reduces the scope of enforcement of the regulation. It is important to note that the choice of threshold is not likely to impact on the level of recycling or the main costs associated with recycling; rather it impacts on who pays for that cost and how broadly that cost is dispersed across industry (or more precisely, across liable parties).

Setting a threshold for inclusion (or exclusion) in a regulatory arrangement is one method for minimising the financial burden of regulation. Such thresholds are often granted on the basis that the burden of regulation falls disproportionately on small business, which can be defined as having less than 20 employees⁶ or \$2 million turnover⁷. In the context of the television and computer arrangements, there may also be a disproportionate burden on businesses that are not small but their importation of televisions or computers is a small part of their overall business (with the focus in this report often on the 'smallest individual importer', in terms of units imported, above different thresholds).

In either of these cases, a disproportionate burden is only true to the extent that regulation imposes both fixed and variable costs.⁸ If costs are solely variable then there is no disproportionate impact on small business. However, regulations that impose fixed costs can have a

⁵ Refer to Footnote 1, above.

⁶ Australian Bureau of Statistics (ABS) (2002) *Small Business in Australia, 2001*, Catalogue No. 1321.0.

⁷ Australian Taxation Office (ATO) website, *Am I eligible for the small business entity concessions*, available at <<http://www.ato.gov.au/businesses/content.asp?doc=/content/00103072.htm&pc=001/003/084/004/001&mnu=45054&mfp=001/003&st=&cy=1>>, accessed 20 July 2010.

⁸ Variable costs are dependent on volumes, while fixed costs are not dependent on volumes and cannot be varied in the short term. Examples of fixed costs include capital inputs such as buildings and machinery. Examples of variable costs include labour and raw materials.

disproportionate impact regardless of the size of the business or how often a task is undertaken. Furthermore, the extent to which arrangement costs are able to be passed through to consumers influences the decision around the threshold. If all or most of the costs can be passed through then a low or zero threshold could be considered, as the impact on small business would be negligible or zero. Small businesses however, often tend to lack bargaining power – at least relative to larger businesses – which inhibits their ability to renegotiate existing contracts and pass through costs in the short term. This supports consideration of ‘a’ threshold.

Setting the level of a threshold is difficult as there are a number of competing policy tradeoffs including minimising compliance costs, maximising fairness, maximising competition and minimising ‘gaming’.

There are also a number of practical limitations to assessing an appropriate threshold such as the availability of data, the definition of recycling and the type of collection infrastructure. Data limitations are a particular constraint when setting a threshold, and include the following that have also constrained the scope of this paper:

- The Australian Customs and Border Protection Service (ACS) collects self-reported data on the weight of consignments but not in a way that enables accurate identification of the weight of particular imports. For example, data on weight does not cover all product categories and also includes the weight of pallets and packaging
- Data collected by the ACS on the value of imports is self-reported, subjective and fluctuates over time.
- Information on the identity (and therefore size) of importing companies is confidential, and data is only consolidated by tariff code not by importer thus limiting understanding of the broader scale of an importer’s operations.

In addition, recycling levels will depend on whether recycling targets are defined as a percentage of the entire market, or as a percentage of each liable party’s collective import share only, and also whether collection infrastructure is specific to a particular Arrangement.

Government’s regulatory decisions are not the only influence on the level of the threshold. Decisions by Arrangement Administrators⁹ may also impact on the recommended threshold level.¹⁰ In particular, this is

⁹ The consultation paper on proposed regulations for the Scheme defines an Arrangement Administrator as ‘the entity responsible for administering an approved Arrangement. This may be a product stewardship organisation established for that purpose. Alternatively, an individual producer or importer may elect to administer their own individual product stewardship Arrangement.’ See DSEWPaC (2011) *National Television and Computer Product Stewardship Scheme – Consultation Paper on Proposed Regulations*, March, p 33.

¹⁰ This does not imply that the thresholds should be regularly updated in response to the decisions of Arrangement Administrators. The *Product Stewardship Bill 2011*, which provides a framework for the proposed Scheme Regulations, states that ‘[t]he Minister must review the operation of an approved co-regulatory arrangement before the end of the period of 5 years starting on the day the arrangement is approved and each successive 5 year period’ (Division 4, Section 27).

because the method and degree to which arrangement administration costs are applied to members will impact the extent that fixed and variable costs are imposed. For example:

- [Arrangement Administrator approach to fee basis](#) – if a Product Stewardship Organisation (PSO) funds the arrangement by requiring contributions from participants in proportion to their market share, rather than on a fixed fee basis, this has the potential to allow a relatively lower threshold. If a combination of these is employed, the lower the magnitude of the fixed fee component, the greater the potential to lower the threshold
- [Scale of funding](#) – in addition to the form of funding, Arrangement Administrators will impact on the appropriate threshold level based on the scale of their funding. If the PSOs/individual arrangements are able to reduce arrangement costs, a lower threshold may be more reasonable. This could be done by reducing/minimising PSO/individual arrangement administration costs, or reducing/minimising collection and recycling costs by ensuring competitive tendering for providers of these services.

It should also be noted that the Scheme regulations themselves will influence industry funding models, for example, by:

- Encouraging competition between multiple PSOs to attract importers and manufacturers¹¹
- Minimising the burden of reporting and other administrative requirements.

From PwC's perspective, theoretically the threshold should be determined by reference to the proportional contribution of each business to the cost of any arrangement or their own costs if they are seeking to have their own arrangement approved. This is why the Decision RIS prepared in 2009 focused on units as a proxy of the relative contribution – that is small quantities – rather than the size of the business *per se*. Our analysis in this report of two indicative television and computer industry funding models, however, suggests that practically, funding models with a mix of fixed and variable components can be accommodated within the same threshold levels.

¹¹ The consultation paper on proposed regulations for the Scheme defines a Product Stewardship Organisation as an organisation established to administer an approved Arrangement, which is a set of measures that are implemented in order to meet the product stewardship obligations and requirements of a liable party or group of liable parties under the legislation. The details of an Arrangement will need to be submitted to the Regulator for approval prior to implementation. See DSEWPaC (2011) *National Television and Computer Product Stewardship Scheme – Consultation Paper on Proposed Regulations*, March, p 33.

Threshold recommendations

The section below summarises our core recommendations relating to thresholds for the Scheme assuming only variable fees (based on market share by value). To overcome the problem that ACS data does not allow for consideration of whether each importer operates across other import products and may not in fact be considered a 'small business', the analysis behind the recommendations focuses on the volume and value of units imported. In effect this relies on a focus on defining a small business as one that imports a small volume of television and computer products relative to other market players.

This approach however, leaves open the possibility that there are examples where a small volume importer is not a small business. Nonetheless, the use of 'small volume importer' data allows consideration of the potential impact of lower or changed thresholds and how that might influence the ability of small volume importers to absorb the cost of the arrangement if they cannot pass through the costs to their clients and ultimately to consumers.

The analysis set out in this report is based on the scenario of a single national product stewardship organisation funded either by allocations based on market share of sales (either in terms of sales or volume) as well as consideration of how these impacts might differ depending on the two funding arrangements suggested by the two respective television and computer industry associations.

There is no certainty that a single national product stewardship organisation will be the sole Approved Arrangement, in fact multiple Approved Arrangements are allowed for under the legislation. The recommendations in this report therefore are based on a sub-set of possible future scenarios. Notwithstanding, and subject to the requirements to be imposed by the regulator, it is PwC's view that the scenarios in this report reflect the implications for a national arrangement and hence provide a sound basis for consideration of changes (or not) to the thresholds for liable parties.

Most importantly the final incidence of the costs of any Approved Arrangement will be determined by the quantum of costs (and in the absence of updated data we have drawn on the estimates contained in the Decision RIS), the proportion of fixed to variable costs allocated to each member of an Approved Arrangement, and the ability to pass through costs from the importer to consumers.

Scenarios based entirely on market share allocation

Drawing on the cost estimates used in the Decision RIS for a single national product stewardship arrangement and assuming that all costs are proportionally allocated to members of the arrangement based on their market share (determined by value) but ignoring pass through (this is discussed below), and therefore considering only the initial incidence of such an arrangement, we then make the following observations:

The implications for a revised set of thresholds on Government and importer costs are:

- 1 **Threshold for televisions could be reduced to as low as 1,000 units:**
 - At this threshold, the Government would incur additional administration costs (relative to the current 5,000 unit threshold) of less than \$11,000 per annum
 - The smallest individual importer (in terms of units imported) above a threshold of 1,000 units incurs arrangement costs (based on their own market share by value) of approximately 3.6% of the value of the units imported¹²
 - Comprises 99% of units imported and 13% of importers (relative to 97.5% and 8% under the 5,000 unit threshold).
- 2 **Separate thresholds could be applied for computers, printers and MFDs and other computer peripherals, to reflect the large variation in weight (directly proportional to waste generated) and value of the product**
- 3 **Thresholds for computers, printers and MFDs could be reduced as low as 3,000 units:**
 - This threshold of 3,000 units would increase Government administration costs by \$19,000 per annum relative to a threshold of 5,000 units
 - It would impose arrangement costs on the individual importer of the smallest volume above the 3,000 unit threshold that are 1.7% of the value of their imports
 - Comprises 95% of significant computer units imported and 2.5% of importers (relative to 93% and 1.8% under the 5,000 unit threshold).
- 4 **Thresholds for computer peripherals could be increased to as high as 15,000 units per year:**
 - This results in Government cost savings of around \$83,000 per year relative to the cost estimated in the Decision RIS and maintains importer coverage of around 87%
 - A threshold of 15,000 units for other computer peripherals imposes arrangement costs on the individual importer of the smallest volume above the threshold that are 2.6% of the value of their imports
 - This revised threshold comprises 87% of peripheral units imported and 3% of importers (relative to 94% and 5% under the 5,000 unit threshold).

¹² It should be acknowledged that the analysis was based on the assumption that an importer importing above the threshold is liable in respect of all units. For example, with a threshold of 5000 units, an importer of 5001 units will be liable for all 5001 units, not just the 1 unit above the threshold.

Scenarios based on the industry associations funding models

The funding model and scale of funding for the arrangements will be dependent on the number and type of Approved Arrangements, and their plans for funding. In this report, we have considered the potential impact from two indicative models suggested by the television and computer industry associations respectively.¹³ The analysis does not suggest whether these or other funding models are optimal but rather the analysis highlights how sensitive the initial incidence of cost allocations is to small individual importers.

The two indicative funding models proposed by television and computer industry association representatives that were considered in this report are broadly characterised by:

- **Funding Model 1** – proposes a flat fee of \$250 per annum, along with a variable component based on market share (by units)¹⁴
- **Funding Model 2** – proposes a higher tiered fixed fee ranging from \$1,000 to \$20,000, in addition to a lower variable component based on market share (by weight).

These indicative funding models are compared to arrangement funding based on market share alone¹⁵ given that if costs are solely variable then there is no disproportional impact on small business.

PwC analysed these two funding models to test the impact on arrangement costs as a proportion of import value for the smallest individual importer (by units) above each of the relevant thresholds. The inclusion of a fixed fee component has a disproportionate impact on importers of a relatively smaller number of units, and this impact is in proportion to the magnitude of the fixed fee. If it was found that the smallest importer above each threshold was going to bear arrangement costs of a significant portion of the value of products being imported, then there may be a basis to increase the threshold higher (and vice versa).

¹³ It should be noted that the product stewardship arrangements for television and computers do not cover just PSA and AIIA arrangements. However, these are being used as a proxy for the overall arrangement given that the membership as of March 2010 accounted for a significant volume of products imported. There may be different costs to those firms which choose to make their own product stewardship arrangements.

¹⁴ Note that total arrangement costs are fixed regardless of the funding model, so the inclusion of a fixed fee reduces the balance of arrangement costs that need to be funded based on market share.

¹⁵ Market share calculations would ideally be based on value given that this reflects that units are not homogenous and ACS data on value is collected for all product categories (unlike weight). However, this data will not be made available to Arrangement Administrators. For the purposes of this analysis, market share calculations based on value were compared to market share calculations on the basis of the proposed funding models (units for televisions and weight for computers)

Our analysis for each of the product groups suggests:¹⁶

- For the smallest individual television importer importing above the 1,000 unit threshold, it was found that regardless of the funding model their arrangement costs as a proportion of the value of their imports are not disproportionately higher than for other members of the arrangement (i.e. those importing greater volumes) – estimated to be approximately:
 - 8.2% with the inclusion of a relatively small fixed fee in addition to a variable component based on units imported (Funding Model 1)
 - 8.4% with the inclusion of a larger tiered/variable fee in addition to a smaller variable component based on units imported (Funding Model 2)
 - 8.1% based on market share by units imported alone – where this compares with 3.6% if the costs were allocated based on market share by value.
- For the smallest individual computer, printer and multi-function device importer importing above 3,000 units, their arrangement costs as a proportion of the value of their imports are not disproportionately higher than for other members of the arrangement – estimated to be approximately:
 - 1.8% with the inclusion of a relatively small fixed fee in addition to a variable component based on weight imported (Funding Model 1)
 - 8.3% with the inclusion of a larger tiered/variable fee in addition to a smaller variable component based on weight imported (Funding Model 2)
 - 1.7% based on market share by weight imported alone – where this compares with 1.7% if costs were allocated based on market share by value.
- For the smallest individual computer peripheral importer importing above 15,000 units, their arrangement costs as a proportion of the value of their imports are not disproportionately higher than for other members of the arrangement – estimated to be approximately:
 - 0.7% with the inclusion of a relatively small fixed fee in addition to a variable component based on weight imported (Funding Model 1)
 - 0.9% with the inclusion of a larger tiered/variable fee in addition to a smaller variable component based on weight imported (Funding Model 2)

¹⁶ It should be acknowledged that the analysis was based on the assumption that an importer importing above the threshold is liable in respect of all units. For example, with a threshold of 5000 units, an importer of 5001 units will be liable for all 5001 units, not just the 1 unit above the threshold.

- 0.6% based on market share by weight imported alone – where this compares with 2.6% if costs were allocated based on market share by value.

Importers ability to pass through costs

These ratios highlight that for computers (and computer peripherals) a lower (or higher) threshold could be considered regardless of whether an importer can pass through the cost of the scenarios considered.

For televisions however, a 3% to 8% impost on the smallest individual importer as a share of the total value of their imported televisions is quite high, particularly since this includes the cost of the television. While these outcomes are influenced by the total cost of any Approved Arrangement and the allocation method for those costs, the wider question for this analysis is whether or not the actual cost imposed on, or incurred by, importers can be passed through to household consumers.

To answer this accurately we would need to know more about the nature of the market for televisions than has been possible within the scope of this report (in economic parlance we would need to know the price elasticity for the demand for importers' services for televisions). Standard economic analysis of an impost outlined above would suggest that unless the market for importers' services was perfectly inelastic then importers would bear some of the estimated costs. The difference with this analysis, however, is that once the Scheme/Approved Arrangements are in place, consumers will not only be purchasing a television or computer – they may be contributing to recycling/recovery of the end of life items.

The Decision RIS showed that consumers are demanding more than just televisions, computers and peripherals, but are also willing to pay for guaranteed levels of recycling. This willingness to pay is greater than the cost of recycling. PwC has therefore concluded that while any cost associated with an Approved Arrangement will increase the cost to importers of televisions, consumers are willing to pay more for a television plus recycling of the end-of-life television. In short, cost pass through to consumers is a reasonable expectation given consumers' willingness to pay.

From an economic point of view, the cost of the arrangement results in a shift to the left (or up) of the supply curve for television importer services – and, all things being equal, and so long as the demand for television importer services is not perfectly inelastic – then importers would incur some of the costs of an Approved Arrangement. This however, will be countered by a shift upwards of the demand curve for television importer services reflecting consumer willingness to pay. Given that the potential shift in the demand curve (i.e. the willingness to pay) is likely to be greater than the shift in supply curve (i.e. the cost to recycle/recover televisions for liable parties) then it is reasonable to conclude that pass through of costs is expected.

Taking all of these factors into account, we provide the following recommendation:

The thresholds could be changed from the previous RIS threshold of 5,000 units for all products to as low as 1,000 units for televisions, as low as 3,000 units for computers, printers and multi-function devices (MFDs) and as high as 15,000 units for other peripherals

Other factors impacting thresholds

Other recommendations relating to specific factors impacting thresholds – and matters that could be included in the approval process – are:

- 1 Thresholds are more likely to be cost effective if calculated on an annual basis as opposed to more frequently. This will minimise the compliance costs of business and the administration costs of Arrangement Administrators/Government
- 2 Arrangement Administrators should fund the arrangement based on a company's import share and should reduce/minimise arrangement costs wherever possible. This will reduce the financial burden on smaller businesses and allow a lower threshold to be implemented
- 3 Recycling targets for each Approved Arrangement should be based on the percentage of the entire market (including exempted importers/manufacturers) in terms of units
- 4 The Government should maintain its position that there is a general obligation for all Approved Arrangements to accept any end of life product regardless of brand.
- 5 The threshold criteria should be units because data on weight is not uniformly collected by the ACS for television and computer products, and value is subjective and fluctuates over time
- 6 If the incentive for gaming is to be reduced, the threshold for all products (particularly televisions) could be lowered further, although this would increase the likelihood that smaller importers would be forced to exit the market.

1 Introduction to the policy issue

In late 2009, the Australian Government ('the Government') endorsed the establishment of regulation for a National Television and Computer Product Stewardship Scheme ('the Scheme'), which will involve producers (subsequently defined as television and computer importers/manufacturers) to be responsible for the collection and recycling of end-of-life televisions and computers. Liable parties will be required to meet the obligations of the Scheme by being part of an Approved Arrangement.¹⁷

As part of that process, the Government agreed to a threshold exemption below 5,000 imported units,¹⁸ applying to all television and computer tariff codes (see Appendix C).

At the request of the television and computer industry associations, the Department of Sustainability, Environment, Water, Population and Communities (DSEWPac) has been asked to consider the appropriateness of a 5,000 unit import threshold for exempting an importer or manufacturer from the Scheme, including consideration of additional complexities and costs of administering the Scheme.

Product Stewardship Australia (PSA) and the Australian Information Industry Association (AIIA) comprise the peak television and computer brands/retailers. They propose to form a Product Stewardship Organisation (PSO) to meet their obligations under the regulation. PSA and AIIA have expressed concern about:

- Ensuring a 'level playing field' for all industry participants
- Eliminating the possibility for 'gaming'¹⁹ the threshold via corporate structures or contracts so as to avoid contributing to the cost of the arrangements
- Differences between the value and weight of products and hence the need for a tailored threshold for different product groupings
- Uncertainty caused when the volume imported fluctuates above and below the threshold between periods.²⁰

¹⁷ The consultation paper on proposed regulations for the Scheme defines an Arrangement as '[a] set of measures that are implemented in order to meet the product stewardship obligations and requirements of a liable party or group of liable parties under the legislation. The details of an Arrangement will need to be submitted to the Regulator for approval prior to implementation and each Arrangement will need to nominate an administrator.' See DSEWPac (2011) *National Television and Computer Product Stewardship Scheme – Consultation Paper on Proposed Regulations*, March, p 33.

¹⁸ Any reference to importers alone reflects the fact that there is currently no domestic manufacture of televisions and computers.

¹⁹ Any threshold may encourage importers to structure themselves or to try to 'game' their activities to be below the threshold by either setting up multiple companies to import below the threshold, setting up new companies and winding them up before making payments, using contracts and other importers or misrepresenting the number of units that they are importing.

²⁰ PSA (2010) *Letter to DSEWPAC*, 19 January; DSEWPAC (2010) *personal communication*, 22 April

In response to this, DSEWPaC engaged PwC to prepare this analysis on thresholds for the national television and recycling scheme.

In considering the impact of the industry associations proposed approach it is important to keep in mind that the suggested funding option considered is but one of many possible scenarios that could be approved under the legislation. The analysis is therefore illustrative for policy purposes rather than definitive, fixed, or reflecting a guaranteed outcome. With this in mind it is helpful to recall the conclusions and policy commitment flowing out of the 2009 Environment Protection and Heritage Council (EPHC) Decision Regulatory Impact Statement (RIS).

In the Decision RIS, three thresholds were considered, each based on the number of units imported and the market coverage achieved. For ease of reference these thresholds are represented in Table 1 below.

Table 1: Thresholds analysed in the Decision RIS

Arrangement coverage	99.5% of units	98% of units	95% of units
Televisions	400	2,000	5,000
Computers ²¹	200	1,000	4,000
VDUs	100	500	2,000
All products	200	1,000	5,000

Source: PwC (2009) *Decision RIS: Televisions and Computers*, prepared for the EPHC, Appendix F, p 208

The Decision RIS involved an economic cost benefit analysis (CBA) to assess various regulatory and non-regulatory scheme options. In this analysis, the three thresholds outlined in Table 1 were also assessed. As the CBA compared total costs to Australians, as opposed to the incidence of that cost (e.g. per importer), the analysis suggested that the higher threshold (95% of units) resulted in the greatest net benefit to society as a whole (see Table 2). This is because it was assumed that total compliance and administrative costs increase as the threshold is reduced, as a larger number of importers are included in the arrangements and subject to reporting and other administrative costs. These costs are borne both by the importers and by the Australian Government given its responsibility for ensuring compliance.

²¹ 'Computers' includes desktops, laptops and peripherals such as, speakers, keyboards and mice. See Appendix C.

Table 2: Net benefits (NPV)²² of the scheme from the Decision RIS at different thresholds levels (present value, \$2009)

	Threshold	Net benefit / NPV (\$2009, millions)	Difference relative to no threshold (NPV, \$2009, millions)
Televisions	No threshold	\$386	-
	99.5% of units	\$392	\$6
	98% of units	\$392	\$6
	95% of units	\$393	\$7
Computers	No threshold	\$37	-
	99.5% of units	\$145	\$108
	98% of units	\$157	\$120
	95% of units	\$164	\$127
VDUs	No threshold	\$369	-
	99.5% of units	\$388	\$19
	98% of units	\$392	\$23
	95% of units	\$394	\$25
All products	No threshold	\$517	-
	99.5% of units	\$629	\$112
	98% of units	\$642	\$125
	95% of units	\$649	\$132

Source: PwC (2009) *Decision RIS: Televisions and Computers*, prepared for the EPHC, pp 184-185

Note: based on 'Option 3' presented in the Decision RIS²³

A further consideration beyond the net benefit analysis used in the Decision RIS, however, is that for higher thresholds the burden of the cost of the arrangements falls on a smaller group of businesses. The issue of the threshold is more acute for television importers given that there are fewer television importers compared with the number of computer importers. Some of the key differences in the computer and television industries are discussed below.

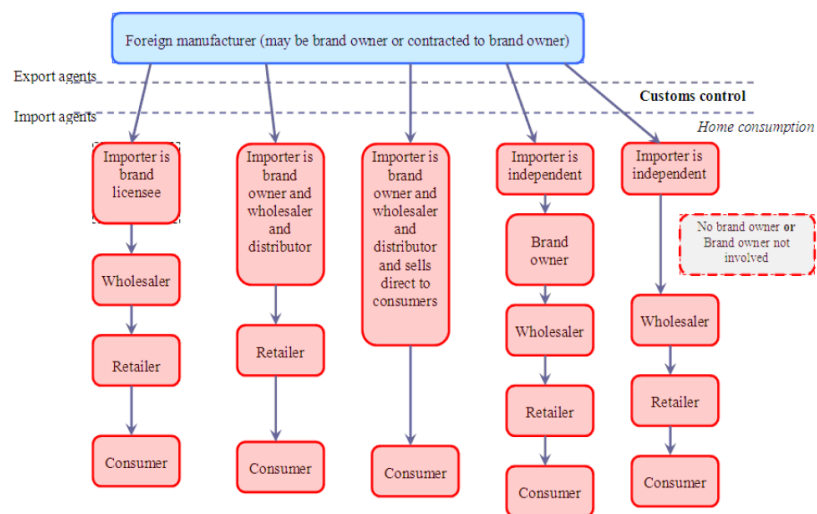
²² This is the Net Present Value, which converts future cost and benefit flows into their present value.

²³ Option 3 was defined as a Commonwealth administered Extended Producer Responsibility Scheme

1.1 Television and computer supply chains in Australia

The television and computer industry supply chains are comprised of brand owners and/or manufacturers, importers and/or brokers, wholesalers retailers and consumers. Presently, all television and computer products are manufactured overseas and imported in to Australia. However, a small and declining proportion (12%) of desktops are assembled in Australia from imported parts.²⁴

Figure 1: Television and computer industry supply chain



Source: DSEWPaC (2011) *National Television and Computer Product Stewardship Scheme – Consultation Paper on Proposed Regulations*, p 14

Table 3 lists the key features of brands/manufacturers and importers/brokers in the television and computer industries.

Table 3: Key features of brands/manufacturers and importers/brokers in the television and computer industries

	Television industry	Computer industry
Importers / brokers	<ul style="list-style-type: none"> 450 importers in 2008 Predominantly independent (i.e. not brands / manufacturers). However, around 70% of products (by volume) are imported by 8 brands²⁵ 	<ul style="list-style-type: none"> 9,999 importers in 2008 Brands may use independent importers/brokers.

²⁴ Australian Information Industry Association (2009), *pers. comm.*, 14 April

²⁵ PSA (2010), *pers. comm.*, 18 June. While the accuracy of this advice has not been independently verified by PwC, the precise proportion do not alter our conclusions.

	Television industry	Computer industry
Manufacturers / brands	<ul style="list-style-type: none"> 6 major brands and various trade brands/private labels in 2008²⁶ All televisions manufactured overseas²⁷ Top 4 companies account for around 61% of sales by value²⁸ 	<ul style="list-style-type: none"> 37 major brands and various 'other' brands in Q4 2008²⁹ Nearly all computers and peripherals are manufactured overseas³⁰ A small and declining proportion (12%) of desktops are assembled in Australia from imported parts³¹ Around 88% of PC sales, 80% of monitor sales and 98% of printer sales by less than 50 companies³²

1.2 Television and computer industry

Table 4 highlights some of the key differences across the two product groupings, including volume of imports, value of imports, and weight of imports.

Table 4: Key statistics in the national television and computer industries

	Televisions	Computers
Statistic	Analogue and digital televisions	Desktops, laptops and peripherals (such as cables, keyboards, mice and speakers)
Import companies (2008)	450	9,999
Average annual imports (millions of units)	4.1	31.4
Average annual imports per importer (units)	9,100	3,100
Average annual imports (tonnes)	104,000	51,000
Average weight per unit (kg)	25.0	1.6
Value (average FOB value/unit)	\$510 - \$634	\$13 - \$926
Value (total industry FOB value, \$ millions)	\$1,950	\$5,817

Source: DFAT STARS Database consistent with ABS Cat No 5368.0, December 2008 data; ACS; DCCEE, Retail Audit CTV AU December 2008; IDC, PC, Monitors and Hardcopy Peripherals Tracker, Q4 2008

²⁶ Department of Climate Change and Energy Efficiency (DCCEE), *Retail Audit CTV AU December 2008*

²⁷ Australian Broadcasting Association, (2006), *The World Today – Australia's last television plant closes*, accessed 9 April 2009, available at <<http://www.abc.net.au/worldtoday/content/2006/s1554891.htm>>

²⁸ DCCEE, *Retail Audit CTV AU December 2008*

²⁹ IDC, *PC, Monitors and Hardcopy Peripherals Tracker, Q4 2008*

³⁰ There are some local manufacturers of computer parts, for example AWA, which manufactures and exports super VGA graphics and controller chips. See IBISWorld (2009) *Computer and Related Equipment Manufacturing in Australia*, November, p 26

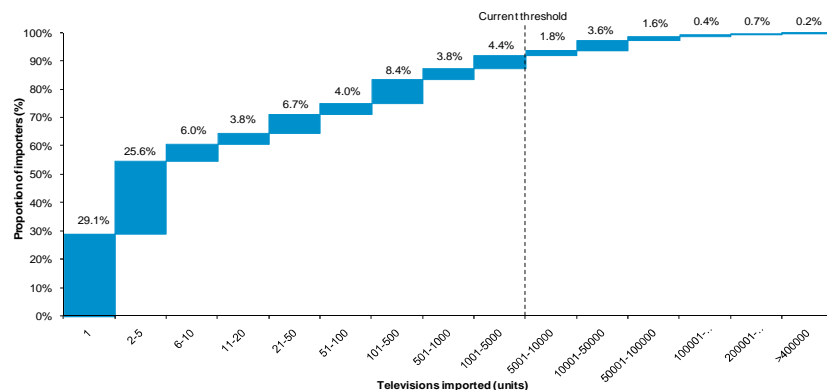
³¹ Australian Information Industry Association (2009), *pers. comm.*, 14 April

³² IDC, *PC, Monitors and Hardcopy Peripherals Tracker, Q4 2008*

Television importers

Based on 2008 Australian Customs and Border Protection Service (ACS) data, there are 450 companies that import televisions. The vast majority of these companies import a relatively small number of units. **For example, 75% of companies import 100 units or fewer. In contrast, only 8% of companies import more than 5,000 units.**

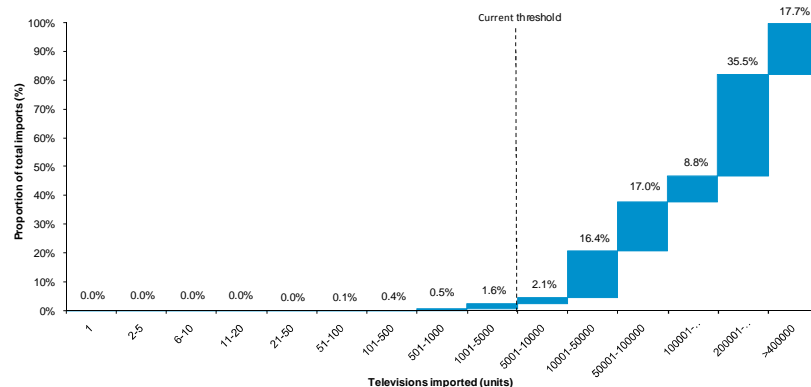
Figure 2: Distribution of television importers by number of units imported (2008)



Source: ACS

Figure 3 presents the proportion of total imports for each category of importers in Figure 2. For example, those companies importing less than 100 units are responsible for 0.1% of total imports compared to 97% for companies importing more than 5,000 units.

Figure 3: Proportion of total imports for different import ranges (2008)

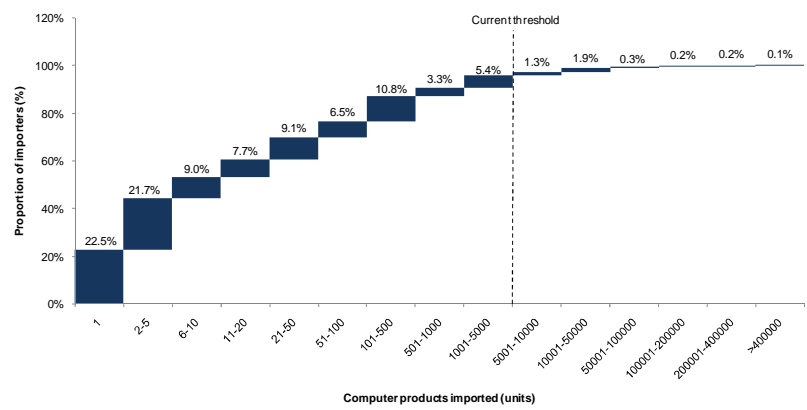


Source: ACS

Computer importers

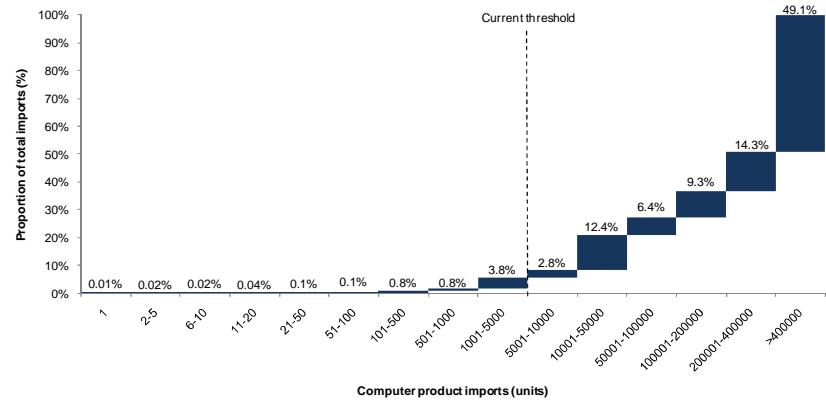
Based on 2008 ACS data, there are 9,999 companies that import computers and peripherals. The vast majority of these companies import a relatively small number of units. **For example, 75% of companies import 100 units or fewer and these companies are responsible for 0.3% of imports. However, there are also a number of very large importers. For example, 0.1% of companies import more than 400,000 units, but these companies are responsible for 49.1% of units.**

Figure 4: Distribution of computer importers by number of units imported (2008)



Source: ACS

Figure 5: Proportion of total imports for different import ranges (2008)



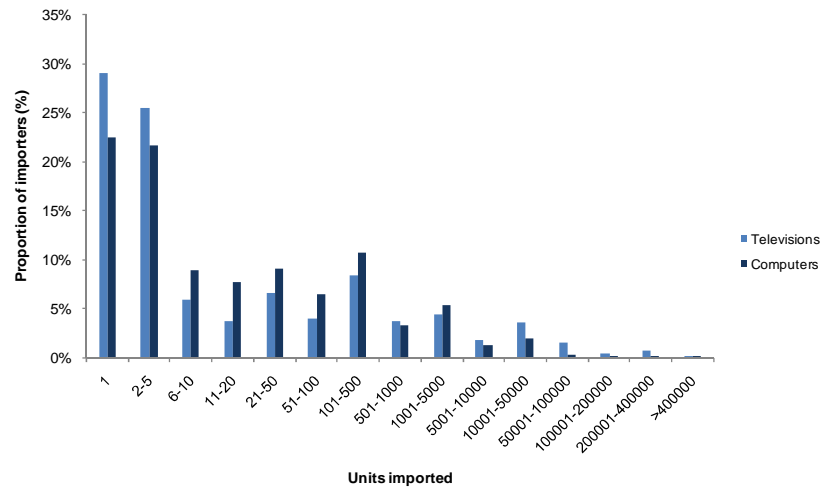
Source: ACS

Note: Totals may not sum due to rounding

Comparison of television and computer importers

Figure 6 compares the number of units imported by television and computer importers. **Relative to computer importers, a larger proportion of television importers import less than 5,000 units.**

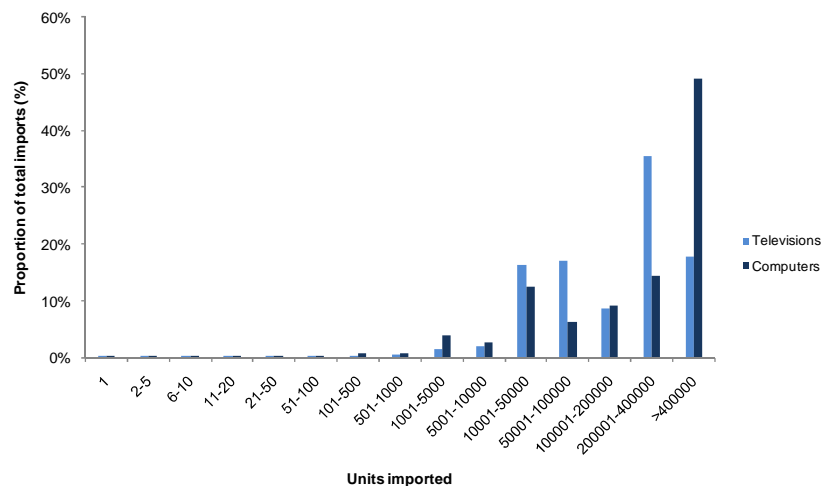
Figure 6: Comparison of the distribution of television and computer importers by number of units imported (2008)



Source: ACS

Figure 7 compares total imports for different sized importers in the television and computer industries. In the computer industry, the largest importers (>40,000 units) are responsible for a substantially higher proportion of total imports than television importers.

Figure 7: Comparison of the proportion of total television and computer imports for different import ranges (2008)



Source: ACS

1.3 Computers and substantial products versus peripherals

Computers and computer products differ greatly in terms of size, weight and value. Substantial items include desktops, laptops, multi-function devices (MFDs), central processing units (CPUs) and monitors. These can be contrasted with other secondary peripherals such as fans, keyboards, mice, circuit boards, hard drives, speakers, web cams, power supplies and power cords, which are less significant in terms of size, weight and value (see Appendix D).

Table 5 highlights some of the key differences between substantial computer products and secondary peripherals in terms of the number of importers, volume of imports and value of imports. There are more peripheral importers, who are importing a greater volume of products, but the value of these products is substantially lower (both in aggregate and on a per importer basis).

Table 5: Key statistics in the computer industry – substantial products versus peripherals

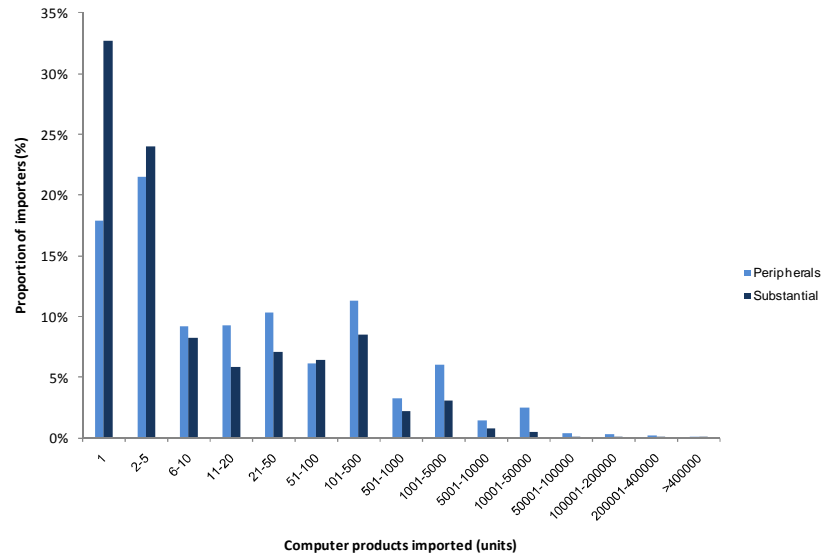
Statistic	Substantial	Peripherals
	Desktops, laptops, MFDs, CPUs, CRT monitors and flat screen monitors	Fans, keyboards, mice, circuit boards, hard drives, speakers, web cams, internal power supplies, external power supplies, power cords
Import companies (2008)	4,984*	7,165*
Imports (2008, millions of units)	10.2	20.7
Average annual imports per importer (units)	2,039	2,893
Value (2008, total industry FOB value, \$millions)	\$4,729	\$1,088
Average value of imports per importer (\$)	\$948,794	\$151,841

Source: ACS

*** Note: the number of companies does not sum to 9,999 as 2,150 companies (22%) import both substantial and peripheral computer products**

Figure 8 compares the number of units imported by importers of substantial computer products and peripheral importers. Importers of substantial products tend to import lower volumes than importers of peripherals.

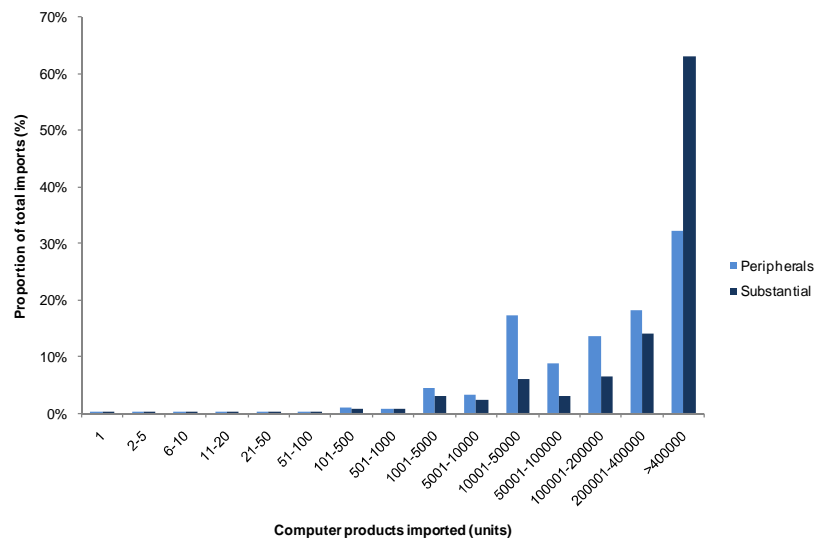
Figure 8: Distribution of computer importers by number of units imported – substantial computer products versus peripherals (2008)



Source: ACS

As outlined in Figure 9, large importers of substantial computer products are responsible for the vast majority of total imports of these products.

Figure 9: Proportion of total imports for different import ranges – substantial computer products versus peripherals (2008)



Source: ACS

1.4 Impact of thresholds on the two industries

The choice of threshold will impact on the television and computer product groupings differently as well as individual businesses within those groupings.

The nature of those impacts, however, was not something that the Decision RIS considered in detail. The thresholds applied in the Decision RIS were based on the number of units imported, with separate thresholds for:

- Televisions
- Computers and computer related products
- Visual display units (VDUs)³³
- All products.

Units of computers and televisions, however, are not equivalent even within product categories as units differ both in terms of weight and value. For example the 'computers' category contains:

- Speakers valued at \$13 each, and laptops valued at \$899 each
- CPUs, which have a negligible weight (0.05 kg), and complete PCs, which weigh an average of 14.1 kg (see Appendix B).

Consideration of the appropriateness of the proposed threshold requires a framework that allows for identification of the trade offs and relative merits of different approaches. In this regard the remainder of this report discusses:

- The range of criteria for setting a threshold
- The practical limitations that restrict the choice of threshold
- Analysis of practical threshold options, incorporating indicative funding models proposed by industry association representatives and the impact the funding model will have on liable parties.³⁴

It is important to note that the choice of threshold is not likely to impact on the level of recycling or the main costs associated with recycling; rather it impacts on who pays for that cost and how broadly that cost is dispersed across industry.

³³ Visual display units include televisions, computer monitors and complete PCs.

³⁴ It should be noted that the purpose of this analysis is not to determine which funding model is optimal.

2 Rationale for a threshold

As a general statement, the implementation of new or amended regulations has the potential to impact consumers, businesses and government.

Some regulatory impacts will be positive, such as reduction in environmental externalities from disposal of waste to landfills. However, some impacts may be negative such as industry costs to comply with new regulation. Furthermore, the impacts may affect one party more than another – for example regulatory compliance costs may affect importers and/or customers. This may be despite net benefits being generated for the broader community.

Providing an exemption to regulatory requirements is usually designed or intended to reduce the administrative cost on businesses (or individuals) for which activity may be small or peripheral and the cost of compliance is disproportionately high. It also reduces costs to government since it reduces the scope of enforcement of the regulation.

Setting a threshold for inclusion (or exclusion) in a regulatory scheme is one method for minimising the financial burden of regulation. Such thresholds are often granted on the basis that the burden of regulation falls disproportionately on small business, defined as having less than 20 employees³⁵ or \$2 million in revenue.³⁶ In the context of the television and computer arrangements, there may also be a disproportionate burden on businesses that are not small but their importation of televisions or computers is a small part of their overall business.

In either of these cases, a disproportionate burden is only true to the extent that regulation imposes both fixed and variable costs.³⁷ If costs are solely variable then there is no disproportional impact on small business. However, regulations that impose fixed costs can have a disproportionate impact – such as mandatory reporting requirements for occupational health and safety (OHS), regardless of the size of the business or how often a task is undertaken.

³⁵ ABS (2002) *Small Business in Australia, 2001*, Catalogue No. 1321.0

³⁶ ATO website, *Am I eligible for the small business entity concessions*, available at <<http://www.ato.gov.au/businesses/content.asp?doc=/content/00103072.htm&pc=001/003/084/004/001&mnu=45054&mfp=001/003&st=&cy=1>>, accessed 20 July 2010

³⁷ Variable costs are dependent on volumes, while fixed costs are not dependent on volumes and cannot be varied in the short term. Examples of fixed costs include capital inputs such as buildings and machinery. Examples of variable costs include labour and raw materials.

2.1 Tradeoffs to compare threshold scenarios

There are a range of benefits and tradeoffs under different threshold levels, which relate to:

- Arrangement costs
- Fairness
- Competition³⁸
- Possibility of gaming.

These are the basis to compare threshold options below in Table 6. It should be noted that any discussion of funding is generic and does not refer to the indicative industry association funding model scenarios analysed in Section 3.2

Table 6: Policy tradeoffs at different threshold levels

Threshold level	Benefits	Trade offs
Low threshold	<ul style="list-style-type: none"> • Fairness: Distribution of funding is across a greater number of parties, reducing the level of funding per party • Possibility of gaming: Lower possibility of gaming by setting up multiple companies to each trade below the threshold. 	<ul style="list-style-type: none"> • Competition: Reducing the magnitude of the threshold may mean that the financial/regulatory burden on some participants is sufficiently onerous to force them to exit the market (either because the product in question makes up a small part of their business, or they are a small business). Compliance costs may also act as a barrier to entry for those considering entering the market. This will restrict competition • Fairness: If costs are not proportional (i.e. there are fixed costs), there are issues for smaller businesses or businesses where the product in question makes up a small part of their business.
Higher threshold	<ul style="list-style-type: none"> • Competition: Compliance cost and financial/regulatory burden on small businesses or businesses where the product in question makes up a small part of their business are less likely to be so onerous that it forces them to exit the market. This results in greater competition. 	<ul style="list-style-type: none"> • Fairness: Distribution of funding across fewer parties, increasing the level of funding per party • Competition: Potential for those exempted from the arrangements winning market share at the expense of liable parties, although depending on where a threshold is set such an impact will only be up to the point of that threshold. • Possibility of gaming: Higher likelihood of gaming by setting up multiple companies to each trade below the threshold.

³⁸ In this analysis, the term 'competition' refers to competition between importers/manufacturers, which are targeted by the regulations. This should not be confused with competition between Approved Arrangements in the market for collection and recycling services. The threshold applies to all companies equally (i.e. regardless of whether they intend to meet their obligations through a joint arrangement or develop their own)). The decision to set up an independent arrangement will be driven by cost relativities and other non-market values (e.g. a company can market that it has set up its own arrangement).

It is useful to highlight two concerns raised by PSA and AIIA, which should be taken into account (and are discussed in more detail in Chapter 4):

- **Fairness** – while total arrangement costs to importers or manufacturers generally do not differ with different thresholds³⁹, the higher the threshold the fewer companies there are to fund those costs. Higher thresholds mean that each company remaining in the arrangement must fund a higher proportion of total arrangement costs. This therefore increases the ‘pay-off’ of avoiding or ‘gaming’, the threshold by using company structures or contracts to fall below the threshold criteria
- **Competition** – firms that fall below the threshold do not incur arrangement costs of compliance.⁴⁰ Up to the limit of the threshold, these firms could increase their share of imports.

Before discussing the tradeoffs specific to television and computer threshold options, the next chapter examines a number of practical limitations associated with the threshold applied.

³⁹ For example, in the television and computer arrangement, the only cost that is related to the number of importers in the arrangement is importer compliance costs from reporting etc. However, it should be noted that thresholds do have an impact on the costs to Government from enforcing the regulations

⁴⁰ These firms do not incur the compliance costs of directly interacting with the regulator. However, they will still incur costs such as monitoring their position relative to the threshold and monitoring regulatory developments.

3 Practical limitations

The type and form of data collected by the ACS limits the range of thresholds that could be adopted in the television and computer recycling scheme.

More importantly, the funding model and scale of funding for the arrangements will be dependent on the number and type of Approved Arrangements involved in the Scheme and their plans for funding. In this report, we were, however, able to consider the potential impact from two indicative models, in order to consider the relative impact of different thresholds and threshold criteria.⁴¹

In addition, at the time of undertaking this analysis, recycling targets and the type of collection services proposed by Arrangement Administrators⁴² have yet to be defined. These may impact on arrangement coverage at different threshold levels. Collection and recycling levels (and therefore arrangement costs) will depend on whether recycling targets are defined as a percentage of the entire market, or as a percentage of liable parties' collective imports only, and also whether collection services are brand specific.

The limitations on threshold options due to these factors are discussed below.

3.1 Nature and timing of Australian Customs Service data

The ACS currently collects self-reported data on the number of units, the value (free on board)⁴³ and weight of imported televisions, computers and computer peripherals. The practical use of ACS data for the purposes of the Scheme (e.g. thresholds and funding models) requires consideration of the following issues:

- Data on units, weight and value is self-reported
- Data on units is the easiest to verify through audits

⁴¹ It should be noted that the product stewardship arrangements for television and computers does not cover just the proposed PSA and AIIA arrangement as individual companies, or groups of companies, are permitted to set up independent arrangements. However, these are being used as a proxy for the costs of an arrangement. There may be different costs to those firms which choose to make their own product stewardship arrangements.

⁴² The consultation paper on proposed regulations for the Scheme defines an Arrangement Administrator as 'the entity responsible for administering an approved Arrangement. This may be a product stewardship organisation established for that purpose. Alternatively, an individual producer or importer may elect to administer their own individual product stewardship Arrangement.' See DSEWPaC (2011) *National Television and Computer Product Stewardship Scheme – Consultation Paper on Proposed Regulations*, March, p 33.

⁴³ Free on board is a trade term requiring the seller to deliver goods on board a vessel designated by the buyer. The seller fulfils its obligations to deliver when the goods have passed over the ship's rail. The free on board value is the value at this point.

- Data on value is subjective and fluctuates over time
- Data on weight is not transparent and robust, and does not cover all product categories. For example, weight includes the pallets and packaging and is often aggregated with other products. Industry could apply average weight assumptions per tariff code to ACS data on units imported. However, there appears to be a large disparity in unit weights even within tariff codes. For example, the Decision RIS assumed that printers and MFDs weigh 5 kg per unit, on average (see Appendix B). However, some MFDs can weigh up to 250 kg per unit.⁴⁴

As such, and without changes to the collection and reporting of data by ACS, it would appear reasonable to conclude that weight and value based thresholds are not practical.⁴⁵

ACS data on television and computer importers is also anonymous, and does not provide information on the full range of products imported by each importer.⁴⁶ It is not possible therefore to consider whether each 'importer' defined in the ACS data operates across other import products and may not be a 'small business'.

To overcome this data issue, the analysis in this report focuses on the volume and value of units imported, **where volume of imports is a proxy for small business**. This approach allows for consideration of the impact of different thresholds in the market for import services. Moreover, the television and computer portion of their business would represent the 'minimum' business size to participate in the television and computer market.

It should be noted that the consultation paper on the proposed regulations for the Scheme suggests that liable parties should be assessed on the previous year's data (i.e. the market share of imports in the previous financial year).

Recommendation #1: Thresholds are more likely to be cost effective if calculated on an annual basis as opposed to more frequently. This will minimise the compliance costs of business and the administration costs of Arrangement Administrators//Government.

⁴⁴ See, for example, Fuji Xerox, *DocuCentre – III C7600 / C6500 / C5500 – Digital Colour Multifunction Device*, available at <http://www.fujixerox.com.au/doc/743814/fxa_dcc7600_8pp_singles_lowres.pdf>, accessed 10 March 2011

⁴⁵ It should be noted, however, that Arrangement Administrators may still fund their Arrangements based on assumptions regarding weight or value per unit.

⁴⁶ Each individual/company that imports televisions and computers in to Australia is assigned a number and all references to company names or other identifiers were removed in order for PwC to access the information.

3.2 Arrangement funding models

It is planned that under the television and computer recycling Scheme, importers will either administer their own arrangements to meet recycling and collection targets and related regulation, or they will become members of a PSO responsible for administering their involvement in the arrangement (an 'Arrangement Administrator').

Under this latter arrangement, it is understood that arrangement costs will be incurred by a PSO and funded by liable parties (importers/manufacturers) making contributions to that PSO. The method by which these costs are imposed on importers or manufacturers by a PSO has the potential to impact on the threshold level required.

PSO administration costs could be funded by a fixed fee, in proportion to market share, a combination of both, as well as some form of sliding scale. It should be noted that individual arrangement costs will be fixed as there will only be one party participating. Therefore, the analysis has focused on PSO funding models.

Funding a regulatory arrangement by requiring contributions from liable parties or other members in proportion to their import share, rather than on a fixed fee basis, would allow the original policy objectives set out in the Decision RIS to be met with a relatively lower threshold. That is, maximising coverage for the least cost, where a proportional cost will be low for small volume importers and hence a lower threshold is easier to justify.

The advantages and disadvantages of different potential PSO funding models are outlined in Table 7.

Table 7: Analysis of the advantages and disadvantages of different fee-model structures to fund PSO arrangement costs

Funding model	Advantages	Disadvantages
Fixed fee	<ul style="list-style-type: none"> Simple to calculate ('=total costs/number of companies'), with all companies paying the same amount Will assist PSOs to obtain set up funding at the onset of the arrangement. 	<ul style="list-style-type: none"> Not equitable because the fee is not related to a company's contribution to the waste stream Smaller companies face a disproportionate cost burden and may be forced to exit from the market A larger threshold is likely to be required to ensure that these companies are not forced to exit the import market. This will decrease the number of companies contributing to funding and put companies included in the arrangement at a competitive disadvantage relative to companies excluded from the arrangement because they import below the threshold. In proportion however, this impact could be low given a 5000 unit threshold covers 98% for televisions and 95% for computers.
Tiered fee	<ul style="list-style-type: none"> More reflective of a company's ability to absorb compliance costs than a fixed fee. There will be multiple tiers of fees based on a company falling within a range of pre-determined criteria (e.g. units imported, weight or value of imports) Will assist PSOs to obtain set up funding at the onset of the arrangement. 	<ul style="list-style-type: none"> Within a tier, the funding per company is fixed, which is inequitable as these companies will have differing abilities to absorb compliance costs More difficult to calculate than a fixed fee, adding to the administrative complexity of the arrangement.
Proportionate to market	<ul style="list-style-type: none"> Fee is calculated based on a company's market share (defined in terms of units imported, weight or 	<ul style="list-style-type: none"> More difficult to calculate than a fixed fee, adding to

Funding model	Advantages	Disadvantages
share	<p>value of imports). This is the most accurate reflection of a company's ability to absorb compliance costs and is the most equitable funding model</p> <ul style="list-style-type: none"> • Smaller companies are less likely to be forced to exit from the market • A lower threshold is likely to be required. This will increase the number of companies contributing to funding and reduce the number of companies given a competitive advantage relative to the liable parties as they benefit from the higher prices without incurring the offsetting increase in arrangement compliance costs. 	<p>the administrative complexity of the arrangement</p> <ul style="list-style-type: none"> • Will not assist PSOs to obtain set up funding at the onset of the arrangement.

A tiered fee or market share calculation could be based on a number of criteria including the number of units imported, weight of imports or value of imports. As outlined above, all of this data is self-reported. However, value is subjective and fluctuates over time and data on weight is not robust and doesn't cover all products.

Compared to computer products (which cover everything from mice and hard drives to complete desktops and MFDs)⁴⁷, televisions are relatively similar in size. As such:

- In a television only arrangement, a tiered fee or market share could be calculated based on units imported or the value of imports, although a measurement based on units is simpler, more accurate and easier to verify
- in a computer arrangement, a tiered fee or market share calculation based on units may not be appropriate. The value or weight of imports (a proxy for size) may be more appropriate (in spite of the aforementioned shortcomings). However, ACS data on value and weight will not be made available to the arrangements. Industry could apply average weight assumptions per tariff code to ACS data on units imported.

Two indicative funding models were proposed by AIIA and PSA representatives in early 2011, the key features of which include:

- **Funding Model 1** – proposes a flat fee of \$250 per annum, along with a variable component based on market share (by units)
- **Funding Model 2** – proposes a higher tiered fixed fee ranging from \$1,000 to \$20,000, in addition to a lower variable component based on market share (by weight).

PwC will analyse these two funding models to test the impact on arrangement costs for the smallest importer (by units) above each of the relevant thresholds in Section 4.3, noting that the purpose of this review is not to determine which funding model is optimal.

In addition to the form of funding, the way liable parties organise themselves to meet their obligations also impacts on a consideration of

⁴⁷ See Appendix C

threshold level. If the arrangement administrators are able to reduce costs, a lower threshold may be more reasonable. This could be done by:

- Reducing/minimising arrangement administration costs
- Reducing/minimising collection and recycling costs by ensuring competitive tendering for providers of these services.

It should also be noted that the arrangement regulations themselves will influence industry funding models, for example, by:

- Encouraging competition between Approved Arrangements to attract importers and manufacturers
- Minimising the burden of reporting and other administrative requirements.

Recommendation #2: Arrangement Administrators should fund the arrangement based on a company's import share and should reduce/minimise arrangement costs wherever possible. This will reduce the financial burden on smaller businesses and allow a lower threshold to be implemented.

3.3 Definition of recycling targets

Recycling projections in the Decision RIS assumed that there would be a single arrangement for all products or separate arrangements for televisions and computers that were run by separate Arrangement Administrators. It was expected that the cost burden of recycling and collecting the products of those falling below the threshold would be apportioned amongst the remaining liable parties. Based on these assumptions, the level of threshold would not impact on the collection and recycling outcomes of the Scheme.

There is scope for television and computer importers and manufacturers (or groups of importers and manufacturers) to set up their own arrangement outside of the PSO proposed by AIIA and PSA. This may impact the recycling outcomes in the Scheme depending on how the recycling targets are defined. In turn, this will impact on the appropriateness of the threshold, with a one size fits all not necessarily matching best with multiple arrangements. There are two ways the recycling target can be defined:

- **Percentage of the entire market:** If the recycling target of a particular arrangement is calculated as a percentage of the entire market (including those that import/manufacture less than the threshold) then the level of the threshold should have no impact on recycling levels
- **Percentage of liable parties:** If the recycling target of a particular arrangement is calculated as a percentage of units for liable parties, then increasing the magnitude of the threshold will reduce overall recycling levels.

Recycling targets can be defined in terms of units, weight or value of imports. The ACS does not collect robust data on weight and data on value is subjective and volatile, so recycling targets based on units imported are most appropriate. The methodology for establishing collection-for-recycling targets is currently being developed by the Department.

Recommendation #3: Recycling targets for the arrangements approved under the Approved Arrangement should be based on the percentage of the entire market (including exempted importers and manufacturers) in terms of units.

3.4 Type of collection infrastructure

The Decision RIS assumed that collection services would accept all brands of televisions and computers, meaning that the threshold level would not impact on collection outcomes. It is understood that DSEWPac plans to ensure this is the case in the Scheme.

If this was not the case, there would be potential for companies to set up their own collection infrastructure, which could mean that certain collection points only accept specific brands (i.e. those included in a particular PSO or individual arrangement).

To reinforce the importance of the Australian Government maintaining the position that all brands would be collected and recycled regardless of the threshold or the brand involved, the implications of this not being the case for the choice of threshold is discussed below.

- **Brand specific:** If collection services are set up to only accept specific brands (e.g. linked to companies included in the arrangements) then the products of non-participants who fall under the threshold will not be collected
- **General obligation:** If the obligation is for Approved Arrangements to collect any end-of-life product regardless of brand then the threshold should not affect collection.

Once again, this is an example of how the design and approach of the television and computer arrangements will influence the decision on thresholds.

Recommendation #4: The Government should maintain its position that there is a general obligation for all Approved Arrangements to accept any end-of-life product regardless of brand.

4 Analysis of threshold options

For the purposes of the analysis below, it has been assumed that all importers will join a single approved arrangement (e.g. the PSO being proposed by PSA and AIIA), although it should be noted that individual companies may set up individual arrangements which are likely to have different costs to a PSO-administered arrangement. However, the possibility of multiple arrangements should have no impact on the threshold analysis:

- A threshold applies to all companies equally, regardless of whether they intend to join a PSO or form their own independent arrangement
- A threshold does not impact on the decision to set up an individual arrangement, which will be driven by cost relativities and other non-market values (e.g. it is expected that a company can market that it has set up its own arrangement).

4.1 Threshold basis (units, value or weight)

The thresholds applied in the Decision RIS were based on the number of units imported, with separate thresholds for televisions, computers and computer related products, VDUs and all products. Units of these products, however, are not equivalent within product categories as units differ both in terms of weight and value. For example the 'computers and computer related products' category contains both speakers valued at \$13, and laptops valued at \$899 (see Appendix B). It may therefore be more appropriate to have the threshold based on value (given robust data on weight is not collected by ACS) or separate these products in to sub-categories with units which are more similar in terms of weight and value. From PwC's perspective, the threshold should be determined by reference to the proportional contribution of each business to the cost of the arrangement. This is why the Decision RIS focused on units – that is small quantities – rather than the size of the business *per se*. For our previous analysis, 'units' were taken as a proxy of the relative contribution or share of cost of the arrangement. There are however, other criteria that could be considered, including:

- Weight of units sold/imported
- Value of units sold/imported
- Annual turnover of the company
- Size of an import consignment.

The advantages and disadvantages of each of these potential threshold criteria are outlined in the table below, along with the 'units' threshold previously adopted.

Table 8: Analysis of the advantages and disadvantages of different threshold criteria

Criteria	Advantages	Disadvantages
Number of units	<ul style="list-style-type: none"> • Simplicity of measuring the number of units • Data (self-reported) on the number of units imported is currently collected by the ACS. • Easy to verify self-reported data. 	<ul style="list-style-type: none"> • Units are not necessarily uniform. They may differ in terms of size, weight, value etc.
Weight	<ul style="list-style-type: none"> • Takes into account the fact that units are not necessarily uniform. • Data (self-reported) on the weight of units imported is currently collected by the ACS. 	<ul style="list-style-type: none"> • More difficult to measure than the number of units • Data on weight is not transparent and robust, and does not cover all products. Thresholds based on self-reported weight incentivise gaming by under-reporting the weight of imports • Thresholds based on average unit weight assumptions do not reflect differences in products within tariff codes.
Value of units	<ul style="list-style-type: none"> • Takes into account the fact that units are not necessarily uniform • Data (self-reported) on the free on board value of imports is currently collected by the ACS. 	<ul style="list-style-type: none"> • Value fluctuates over time (e.g. driven by consumer demand, inflation, supply shortages etc.) • Value is self-reported by importers and more difficult to verify than units, so thresholds based on value incentivise gaming by under-reporting the value of imports.
Turnover of company	<ul style="list-style-type: none"> • Revenue is a defined accounting term • Public companies are required to report revenue in their Annual Report • Aligns with the Australian Taxation Office (ATO) definition of small business (aggregated turnover less than \$2 million revenue). 	<ul style="list-style-type: none"> • Not all companies have the same range of products. A company's operations may be wider than the scope of the regulations • Private companies are not required to report their revenue. There may be confidentiality issues with divulging turnover amounts • Turnover is not equivalent to profit, so it does not necessarily provide an indication of a company's ability to absorb compliance costs.
Size of an import consignment	<ul style="list-style-type: none"> • Simplicity of measuring the number of units • Data on the number of units in an import consignment is currently collected by the ACS. 	<ul style="list-style-type: none"> • Units are not necessarily uniform. They may differ in terms of size, weight, value etc. • There may be variation in the contents of a consignment (e.g. may also contain products that are not targeted by the regulation) • Companies may import multiple consignments per year, increasing their compliance costs from reporting and increasing Government administration costs.

Source: MMA (2008) Tyres National Environment Protection Measure: Threshold Study, prepared for the National Environment Protection Council, pp 5, 19, 22, 25, 27, 35

As outlined in the table above, different threshold criteria raise a number of issues including:

- **Units imported** – Self-reported data is already collected by the ACS and is easily verified, but units are not homogeneous
- **Weight imported** – takes into account that units are not homogeneous and reflects the contribution of each importer to the waste stream, but robust data is not collected by the ACS for all products
- **Value imported** – takes into account that units are not homogeneous, reflects the ability of importers to absorb arrangement costs and self-reported data is already collected by the ACS, but value is subjective and fluctuates significantly over time.

An alternative is to set different unit thresholds for different products. The range of different products in the 'computers' category may even

warrant setting multiple thresholds for different groups of products within that category (e.g. peripherals versus desktops/laptops/multi-function devices).

Recommendation #5: The threshold criteria should be units because robust data on weight is not uniformly collected by the ACS for television and computer products, and value is subjective and fluctuates over time.

4.2 Scenarios to test threshold exclusion levels

The thresholds outlined in Table 9 have been used as the basis for analysis to provide insights into the impacts of threshold levels on: arrangement costs, fairness, competition, the possibility of gaming and collection/recycling levels. These thresholds were those identified in the Decision RIS for televisions and computers.⁴⁸

Table 9: Thresholds to test threshold impacts (units)

Threshold		Televisions	Computers	VDUs	All
1	99.5% of units	400	200	100	200
2	98% of units	2,000	1,000	500	1,000
3	95% of units	5,000	4,000	2,000	5,000

Note: See Appendix A for importer numbers by threshold.

4.3 Arrangement costs and net economic benefits

A national scheme for television and computer collection and recycling will impose additional ('incremental') costs on importers/manufacturers that they would not have incurred in the absence of a scheme (i.e. the 'base case'). The estimate of these costs draws on the data and estimates used in the Decision RIS, and therefore actual costs may differ depending on the number of arrangements approved and their actual recycling costs. Based on the best available estimates the costs will include:

- **Industry collection costs** – costs incurred by arrangement administrators to collect end-of-life televisions and computers and transport them to reprocessing locations (\$273 per tonne)
- **Reprocessing costs** – costs incurred by the recycling industry to recycle end-of-life televisions and computers (\$700 per tonne)
- **Industry administration costs** – the costs of a single PSO that will administer the collection and recycling of the arrangement (\$1 million - \$2 million per annum)

⁴⁸ Note that other thresholds have also been analysed where warranted by the analysis.

- **Importer compliance costs** – education, notification, permission, procedural, publication, documentation, purchase and record keeping costs (\$1,000 per importer). These are fixed costs that are not related to market share
- **Communication costs** – national communications campaign (\$9 million in the first year of the arrangement and \$500,000 thereafter).⁴⁹

There will also be costs incurred by Government to design the regulation, make regulatory amendments and implement any varied legislation/regulation (\$350,000 per annum for 2 years), government labour costs to administer the regulation on an ongoing basis (\$640,000 per annum) and labour costs related to ensuring compliance with the regulation (minimum of \$380 per importer/other party subject to the regulation).⁵⁰

Table 10 presents the total financial costs to industry imposed by the television and computer collection and recycling scheme (including 10% GST and profit likely to be imposed by collection and recycling contractors),⁵¹ assuming that all importers/manufacturers will join a single PSO/arrangement.⁵² In Table 11 these costs are offset by the financial value of recovered resources, assuming that the arrangement will only need to assist funding the margin between collector/recycling costs and revenues and not their full costs. These costs are likely to be understated given that the Decision RIS calculated economic costs based on long run marginal costs. In reality, there may be higher costs up front as capital investments are required and volumes in early years are likely to be insufficient to achieve economies of scale.

The introduction of a threshold targeting 95% coverage of imports by liable parties (see Table 10) delivers higher cost savings to industry than thresholds targeting 98% or 99.5% of units, with these cost savings ranging from \$7.6 million (\$2009, PV) for televisions only to \$157.5 million in an arrangement covering all products (televisions, computers and computer products).

These savings are relative to a scenario of not granting any exemptions. They are driven by avoided importer compliance costs due to:

- Education, notification, permission, procedural, publication, documentation, purchase and record keeping compliance costs being fixed costs incurred by importers regardless of the level of collection and recycling
- The Decision RIS assumed that threshold levels have no impact on outcomes for collection and recycling (i.e. participating companies would still be responsible for collecting and recycling the products of companies that fell below the threshold)

⁴⁹ PwC (2009), *Decision RIS: Televisions and Computers*, prepared for the EPHC, pp 111-115

⁵⁰ PwC (2009), *Consultation Regulatory Impact Statement: Televisions and Computers*, prepared for the EPHC, pp 74, 127

⁵¹ PwC (2009), *Decision RIS: Televisions and Computers*, prepared for the EPHC, p 183

⁵² Arrangement costs refer only to the proposed AIIA and PSA arrangements and not to the independent arrangements that individual companies may establish.

- The CBA in the Decision RIS assumed a 20 year evaluation period.

Table 10: Total industry costs of a television and computer recycling scheme (PV, \$2009 millions)

		Industry costs	Revenue from recycling	Industry costs not offset by recycling revenue (requires arrangement funding)	Difference relative to no threshold
Televisions	No threshold	\$853.7	\$292.4	\$561.4	\$0.0
	> 99.95% coverage	\$846.9	\$292.4	\$554.5	-\$6.8
	> 98% coverage	\$846.3	\$292.4	\$553.9	-\$7.5
	> 95% coverage	\$846.1	\$292.4	\$553.7	-\$7.6
Computers	No threshold	\$742.5	\$197.9	\$544.6	\$0.0
	> 99.95% coverage	\$614.0	\$197.9	\$416.0	-\$128.5
	> 98% coverage	\$598.8	\$197.9	\$400.9	-\$143.7
	> 95% coverage	\$590.9	\$197.9	\$393.0	-\$151.6
VDUs	No threshold	\$996.8	\$335.1	\$661.7	\$0.0
	> 99.95% coverage	\$975.1	\$335.1	\$639.9	-\$21.7
	> 98% coverage	\$970.5	\$335.1	\$635.4	-\$26.3
	> 95% coverage	\$968.8	\$335.1	\$633.7	-\$28.0
All products	No threshold	\$1,563.6	\$490.3	\$1,073.3	\$0.0
	> 99.95% coverage	\$1,430.8	\$490.3	\$940.5	-\$132.8
	> 98% coverage	\$1,415.2	\$490.3	\$924.9	-\$148.4
	> 95% coverage	\$1,406.1	\$490.3	\$915.8	-\$157.5

Note: industry costs include collection costs, reprocessing costs, administration costs, compliance costs and communication costs

Note: these costs are likely to be understated as they are long-run marginal costs, as used in the Decision RIS CBA

The introduction of a threshold which targets 95% coverage of products imported is expected to deliver cost savings to government due to avoided labour costs related to compliance activity for non-liaable parties. These cost savings are estimated to range from \$1.5 million (\$2009, PV) in a television only arrangement to \$21.8 million in an arrangement covering all products (televisions, computers and computer products).

Table 11: Total government costs of a television and computer collection and recycling scheme (PV, \$2009 millions)

		Government costs	Difference relative to no threshold
Televisions	No threshold	\$8.8	\$0.0
	> 99.95% coverage	\$7.3	-\$1.5
	> 98% coverage	\$7.2	-\$1.5
	> 95% coverage	\$7.2	-\$1.5
Computers	No threshold	\$28.8	\$0.0
	> 99.95% coverage	\$10.8	-\$18.0
	> 98% coverage	\$8.8	-\$19.9
	> 95% coverage	\$7.9	-\$20.8
VDUs	No threshold	\$12.6	\$0.0
	> 99.95% coverage	\$8.6	-\$4.0
	> 98% coverage	\$7.6	-\$5.0
	> 95% coverage	\$7.3	-\$5.3
All products	No threshold	\$29.6	\$0.0
	> 99.95% coverage	\$10.9	-\$18.7
	> 98% coverage	\$8.9	-\$20.7
	> 95% coverage	\$7.8	-\$21.8

Note: government costs include regulatory design and implementation costs and direct government administration costs. On a per annum basis, these costs average up to \$2.9 million

On the basis of minimising government and industry costs, which directly impact on the net economic benefit to society as a whole (see Table 2), the higher threshold of 95% coverage (5,000 units) would be preferred. However, as discussed below, other desired outcomes may result in alternative threshold levels being preferred.

While the introduction of higher thresholds reduces the *total costs* imposed on industry (liable parties), it also alters the distribution of funding as total costs must be funded by a reduced number of importers. Figure 10 (below) sets out the *average annual* arrangement costs per importer assuming:

- Long term marginal costs
- 10% GST and 30% profit
- Threshold levels have no impact on collection and recycling outcomes
- 2% growth per annum in the number of television importers and 1% growth per annum for other importers⁵³

⁵³ The number of importers is assumed to grow at the same rate as projected sales. Sales growth of televisions was 3% in 2008/09 and is assumed to decrease to 1% by 2030/31. This assumption is based on the anticipated initial continuation of sales growth as households replace analogue units with digital, followed by a level of saturation in the number of new televisions required being reached. AIIA has indicated that they expect negative or flat growth for 2008/09 and 2009/10, increasing slightly after that period. A growth rate of 0% is assumed in 2008/09 and 2009/10, then a steady 1% growth rate from 2010/11 onwards. See Hyder Consulting (2009)

- Costs are distributed equally amongst importers (i.e. not based on market share)
- That there is only one arrangement administrator under the scheme.

Average arrangement costs per importer range from \$4,600 in a computer only arrangement with no threshold to \$1.4 million in a television only arrangement targeting coverage of 95% of units (i.e. importers of fewer than 5,000 televisions are excluded from the arrangement).

The proposed thresholds for a television only arrangement may place a disproportionate burden on television companies. For example, a 5,000 unit threshold which maintains coverage of 95% of the units in the market means that each remaining liable party has to incur average annual costs of \$1.4 million, compared to \$63,000 in a computer only arrangement with the same threshold.

As discussed previously, computers and computer products differ greatly in terms of size, weight and value. Applying the same thresholds to peripherals (such as fans, keyboards, mice, circuit boards, hard drives, speakers, web cams, power supplies and power cords) and substantial items (such as desktops, laptops, MFDs, CPUs and monitors) may impose too onerous a burden on peripheral importers as their products typically have lower value. For example, in 2008, one company imported 10,000 circuit boards with a reported value of only \$166. Of all computer importers in 2008, approximately 50% imported peripherals only, 30% imported substantial items only and 20% imported both.

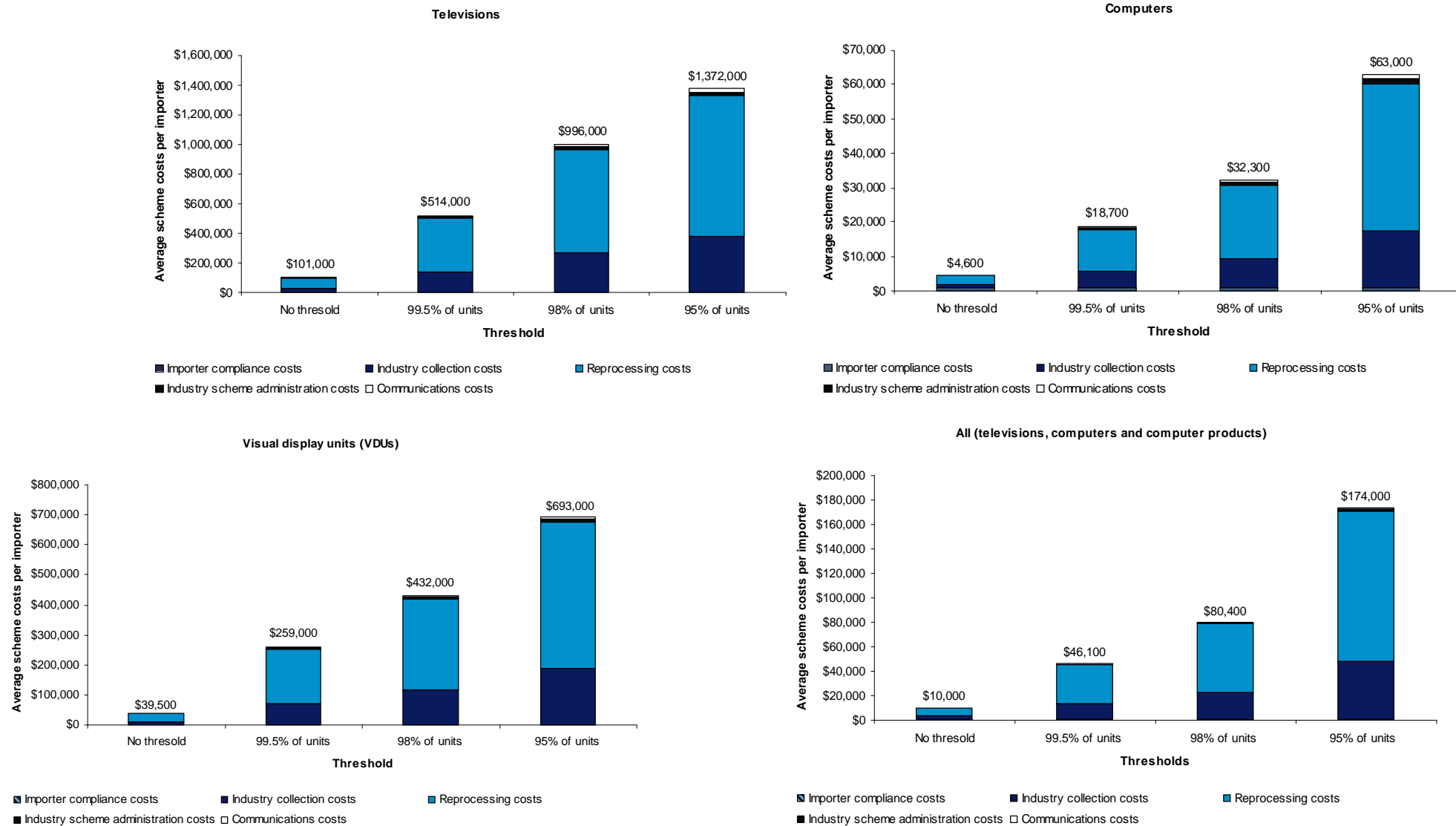
Threshold levels also have implications for the compliance and regulation costs for Government, given that they impact on the level of compliance activity that the Government has to undertake to ensure that all industry participants meet their regulatory requirements (estimated at a minimum of \$380 per importer).⁵⁴

The implications of different threshold levels on the fairness of cost impacts on businesses and Government will be discussed in turn below.

Consultation RIS – Televisions and Computers: Report 1, prepared for PricewaterhouseCoopers, p 15

⁵⁴ PwC (2009), *Consultation Regulatory Impact Statement: Televisions and Computers*, prepared for the EPHC, pp 74, 127

Figure 10 Average annual arrangement costs per importer



Note: arrangement costs in these charts include collection, reprocessing, administration, compliance and communication costs

Assumptions used in the threshold analysis

If arrangement costs imposed on importers/manufacturers results in total costs exceeding total revenue (as a percentage of money recovered by importers over and above the cost of the television or computer), then these importers/manufacturers will make a loss.

An extended period of losses will force them to exit the market or consolidate their product line by ceasing to import televisions and computers. In addition, over time a threshold will result in two 'tiers' of importers determined by whether they are regulated or unregulated.

In the television and computer industries, it is challenging to determine whether an importer will be forced to exit the market, or the extent to which liable parties will be disadvantaged relative to unregulated parties, because importer revenue is uncertain:

- Vertically integrated importers (i.e. those importers that also manufacture, wholesale and retail televisions and computers) receive all the revenue from the sale of the television or computers and the ACS collects self-reported data on the value of imports. However, the proportion of vertically integrated importers is not presented in the ACS data and the identity of importers is confidential (so this cannot be determined from third party sources such as annual reports).
- Importers that are not vertically integrated may receive a commission/fee (e.g. on a \$/TEU⁵⁵ basis) rather than the revenue from selling the imported product. However, the charging basis and level of importers, and their level of vertical integration, is unknown. In this analysis it has been assumed that, although the commission is likely to be negotiated based on the value of the products, it is likely to be significantly less than the total value of the imports given that other players in the supply chain will also charge a mark up.

Given that it is usually more difficult for small businesses to pass through costs and charges and taking into account the data limitations above, PwC has considered arrangement costs as a proportion of the value of imports as a proxy for potential viability for small volume importers. That is, analysis of small volume importers focuses on the ability to absorb arrangement compliance costs without being forced to exit the market. It is important to also keep in mind the following:

- The analysis of arrangement costs and import value is only one factor relevant to the decision on an appropriate threshold level. As discussed in Chapter 2, arrangement costs, competition and the possibility of gaming will also be relevant considerations
- Arrangement administrator costs are assumed to be funded solely on a market share basis (i.e. there is no fixed fee component, such as a joining fee or annual membership fee) –

⁵⁵ TEU stands for twenty-foot equivalent unit and refers to the standard size of shipping containers

analysis below considers a mix of fixed and variable based on indicative funding models

- The higher the threshold, the fewer companies included in the arrangement meaning that proportional market share, and hence arrangement costs per importer, are higher
- The analysis was based on the assumption that an importer importing above the threshold is liable in respect of all units. For example, with a threshold of 5000 units, an importer of 5001 units will be liable for all 5001 units, not just the 1 unit above the threshold.
- The arrangement costs per importer are based on fixed importer compliance costs of \$1,000 (for education, reporting etc.) and arrangement costs based on market share by value. Although ACS data on the FOB value of imports is self-reported, there does not appear to be any incentive to under-report the value. The data is from 2008 and, at that time, there was no scheme in place and therefore no incentive to game by under-reporting the value of imports
- Market share calculations based on units (televisions) and assumed weight per unit (computer products) are also included as sensitivity tests to enable comparison with the assumed basis of market share calculations in the indicative funding models
- This analysis only takes a snapshot of the individual importer whose volumes are just above the respective threshold considered based on a single year of data (2008). Importers of larger volumes are expected to import products with a higher value, although this is not necessarily the case. For example, in the 2008 ACS data, one importer of 169 televisions has an import value of over \$160,000, while the next largest importer of 170 units has an import value of only \$836. There is some volatility in the value of imports for each individual importer given that, even within product/tariff code groupings, value will differ depending on factors such as the brand, quality or features of the product. For example, in 2008 there were two importers of 300 televisions. One had a value of \$24,000 dollars (\$80/unit) while the other had a value of \$48,000 (\$160/unit).

Analysis of television thresholds

To provide guidance as to the potential impact associated with an Approved Arrangement a number of scenarios have been assessed. While all scenarios draw on an assumption that there will be a single national Approved Arrangement, it is acknowledged that this need not be the case with the potential for multiple arrangements to be approved. For each of the scenarios considered the analysis focuses on different cost allocation approaches (that is the allocation of fixed versus variable costs) as well as the basis for that allocation – such as whether to base market share on units, value or weight.

The analysis compares television arrangement costs per importer based on market share by value to determine whether a television importer is likely to be forced to exit the market at different threshold levels.

Subsequent analysis assumes a mix of fixed and variable fees based on indicative industry association funding models. It has been assumed that television industry association funding models will be based on units given that:

- Data on units can be provided by the ACS – although in practice information on units imported will be provided to the regulator who will then inform liable parties who will then inform arrangement administrators
- Data on units is likely to be more reliable given that it is easier for the ACS to audit
- Television units are relatively homogenous (compared to products in the computer industry), so calculating market share based on units is not likely to maintain a degree of fairness.

Scenario for television thresholds assuming only variable fees (based on market share by value)

Table 12 presents the arrangement costs and import value of the smallest television importer (by units) importing above the relevant thresholds.

Table 12: Arrangement costs and import value of the smallest importer (by units) importing above each individual threshold (televisions only)

	Threshold (units)					
	No threshold	200 units	500 units	1,000 units	2,000 units	5,000 units
Arrangement costs per importer (\$)	\$1,080	\$1,590	\$1,329	\$11,019	\$40,522	\$120,228
Import value per importer (\$)	\$2,440	\$17,977	\$10,036	\$305,492	\$1,205,053	\$3,635,311
Arrangement costs per importer as a proportion of import value (%)	44.3%	8.8%	13.2%	3.6%	3.4%	3.3%

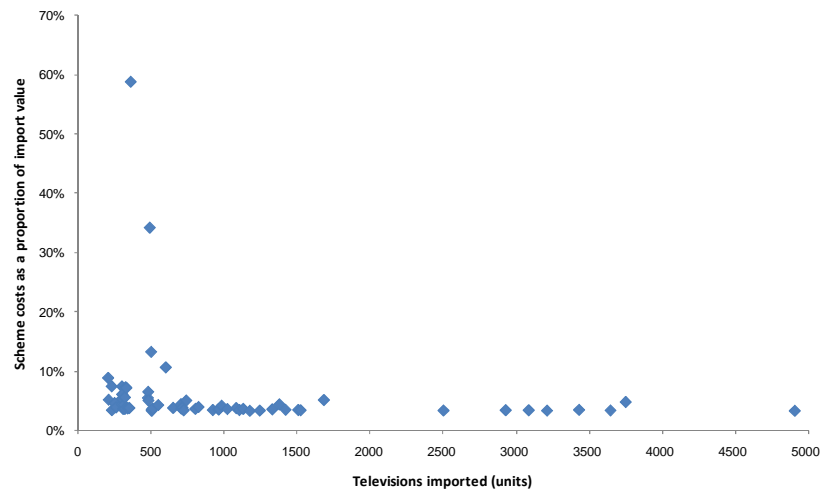
Source: ACS

In contrast to Table 12, which looks at the smallest importer above each threshold, Figure 11 presents cost and import value comparisons for all importers captured by the relevant thresholds.

Despite the volatility in the value of imports for each individual importer, in general the trend in value moves as would be expected (i.e. value increases as the number of units increases). When costs stabilise this appears to be the level when there ceases to be a market distortion between different market importer sizes (i.e. the arrangement costs per importer as a proportion of the value of imports of the smallest importers above the threshold are not disproportionately higher than for other members importing greater volumes). Though data is not available to know precisely at which point importers are no longer able to absorb arrangement costs, the point of convergence does not seem an unreasonable level for importing services to remain undistorted (as

everyone is facing similar proportional costs). In Figure 11, costs appear to stabilise between 500 to 1000 units.

Figure 11: Arrangement costs as a proportion of import value for importers of 200 to 5,000 units (televisions only)



Thresholds impact the level of compliance activity by Government. With the current threshold of 5,000 units, total Government administration costs are around \$650,000 per annum. Relative to these costs, reducing the threshold to 1,000 units would result in an additional \$11,000 in Government administration costs per year. In contrast, if the threshold was reduced to 500 units, incremental Government costs would increase by more than \$20,000 per annum.

Table 13: Incremental Government scheme administration costs relative to the current threshold of 5,000 units (televisions only)

	Threshold (units)					
	No threshold	200 units	500 units	1,000 units	2,000 units	5,000 units
Importers (2008)	450	99	74	57	45	37
Additional Government arrangement administration costs (\$)	\$226,136	\$33,948	\$20,259	\$10,951	\$4,380	\$0

Source: ACS

Based on the analysis of 2008 ACS data and consideration of the tradeoffs identified in Chapter 2, it does not appear unreasonable to reduce the threshold to as low as 1,000 units based on consideration of the following:

- The smallest individual importer (by units) above a 1,000 unit threshold incurs arrangement costs (based on their own market share by value) that are 3.6% of the value of their imports compared to more than 13% if the threshold is reduced to 500 units. The smallest importers above a threshold of 1,000 units do not face arrangement costs as a proportion of the value of imports that are disproportionately higher than other liable parties. Thus, the smallest importer above a 1000 unit threshold is likely to be able to absorb

the arrangement costs even if they are subsequently passed on in the form of higher prices

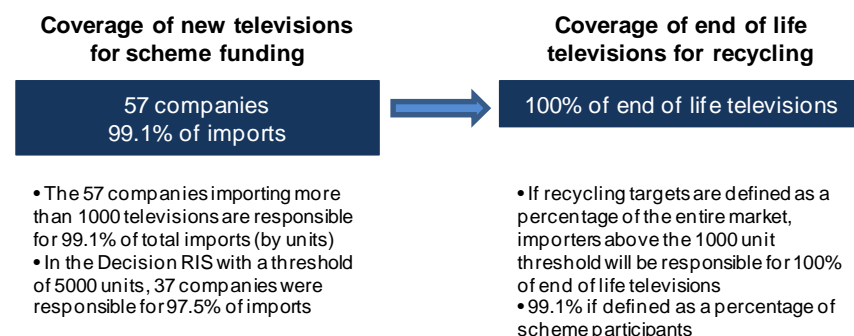
- Although arrangement costs as a proportion of the value of imports appears to converge between 500-1,000 units (i.e. around 600 units) it is not justified to further decrease the threshold given that:
 - Such a threshold is too specific given that the ACS data is from a single year (2008) and does not necessarily represent the industry in 2010 and going forward
 - Adopting the 'rounded' threshold of 1,000 units maintains a margin for error when applying the 2008 data to 2010 and subsequent years.
- Reducing the threshold from 5,000 units to 1,000 units increases Government scheme administration costs by \$11,000 per year, compared to almost twice that (i.e. an additional \$9,000) if the threshold is further reduced to 500 units)
- Arrangement coverage will increase from the current level of 98% with a threshold of 5,000 units to 99%
- Reducing the threshold from 5,000 units to 1,000 units will increase scheme costs to society by \$20,000 per year as 20 additional importers will incur fixed compliance costs (e.g. for education and reporting). This increases to \$37,000 per year (i.e. an additional \$17,000 per year) if the threshold is further reduced to 500 units.

The level of the threshold will influence the distribution of funding amongst liable parties, but should not have an impact on recycling outcomes or the Scheme's net benefits to society. For example, reducing the threshold from 5,000 units to 1,000 units will:

- **Make arrangement funding by importers/manufacturers more equitable:** The number of television importers/manufacturers facing obligations under the arrangement increases from 37 to 57 (based on 2007/08 data), with the market coverage of new television imports increasing from 97.5% to 99.1% of units
- **Have no impact on recycling outcomes:** Assuming recycling targets are defined as a percentage of the entire market, importers will have responsibility for 100% of end-of-life televisions collected for recycling through the arrangement (i.e. including those imported/manufactured by companies exempted from the arrangement for being below the threshold)
- **Have no impact on the Scheme's net benefits to society:** Changing the threshold has no impact on the net costs of the scheme to society⁵⁶ (only the distribution of funding of those costs).

⁵⁶ There will be an annual increase in total importer compliance costs (\$20,000 in 2007/08) and Government administration costs (\$11,000 in 2007/08) due to additional companies being included in the Arrangement (20 companies in 2007/08). However, these costs are not significant when compared to the net costs to society, which were estimated in the Decision RIS to total \$872.8 million (present value) over 20 years. In

Figure 12: Coverage of new and end of life televisions with a threshold of 1,000 units



Note: Arrangement coverage is different from a recycling target.
Arrangement coverage refers to the proportion of imports included in the arrangement. A recycling target refers to the proportion of units that the Government is aiming to be collected for recycling. For example 100% coverage (above) indicates that 100% of units imported are available to recycle, even if only 80% are recycled based on the Government's recycling target.

Scenario for television thresholds based on a mix of fixed and variable fees (indicative industry funding models)

Industry association representatives have provided indicative funding models to DSEWPac. These were described in Section 3.2 and are assessed below. This analysis therefore provides an alternative view point than that presented above, through the inclusion of a fixed fee, in addition to a variable component based on market share.

Table 14 presents the arrangement costs and import value of the smallest television importer (by units) importing above the relevant thresholds. As discussed above, it has been assumed that television industry association funding models will be calculated based on units as this data is more reliable than data on value or weight and television units are relatively homogenous compared to other products, so calculating market share based on units is likely to maintain a degree of fairness. The results from the preliminary analysis based on market share by value and additional analysis based on market share by units are also included to provide a point of comparison.

As illustrated in the table below, the inclusion of a fixed fee component has a disproportionate impact on importers of a relatively smaller number of units, and this impact is in proportion to the magnitude of the fixed fee. However, Figure 13 illustrates that there is still a convergence in arrangement costs as a proportion of import value for importers of more than 1,000 units (i.e. the smallest importers above a threshold of

addition, and as seen later in this report, this cost increase will be offset by cost savings of over \$235,000 from increasing the threshold for computer peripherals (discussed below). See PwC (2009), *Decision RIS: Televisions and Computers*, prepared for the EPHC, p 117

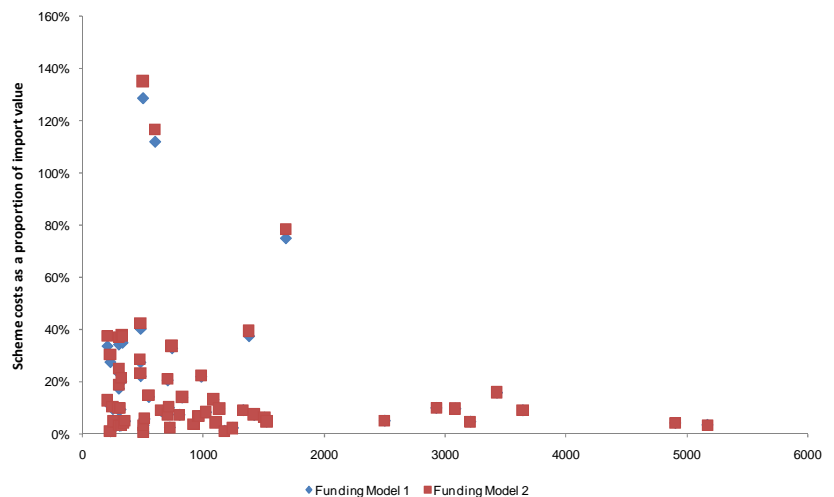
1,000 units do not face arrangement costs as a proportion of the value of imports that are disproportionately higher than other members of the arrangement). As a result, the indicative industry association funding models appear to support the preliminary recommendation to reduce the television threshold from 5,000 units to 1,000 units.

Table 14: Arrangement costs and import value of the smallest importer (by units) importing above each individual threshold based on indicative industry association funding models (televisions only)

	Threshold (units)					
	No threshold	200 units	500 units	1,000 units	2,000 units	5,000 units
Market Share (Value)	44.3%	8.8%	13.2%	3.6%	3.4%	3.3%
Market Share (Units)	41.9%	32.1%	126.1%	8.1%	4.9%	3.3%
Funding Model 1 (Units)	52.2%	33.5%	128.5%	8.2%	4.9%	3.3%
Funding Model 2 (Units)	82.9%	37.5%	135.4%	8.4%	5.0%	3.4%

Source: ACS

Figure 13: Arrangement costs as a proportion of import value for importers of 200 to 5,000 units based on indicative industry association funding models (televisions only)



Drawing on the above cost estimates used in the Decision RIS for a single national product stewardship arrangement and assuming that all costs are proportionally allocated to members of the arrangement based on the value of the market share (determined by value) but ignoring pass through (this is discussed below) and therefore considering only the initial incidence of such an arrangement we then make the following observations.

- First, the actual costs of any Approved Arrangement will determine the quantum of costs for liable parties
- Second, the proportion of fixed to variable costs allocated to each member of an Approved Arrangement will impact on the initial incidence of any arrangement

- Third, the final incidence of any Approved Arrangement will depend on the ability of the importer to pass through those costs to consumers.

In relation to this third point PwC notes that the analysis highlights that for televisions, a 3% to 8% impost on the smallest individual importer as a share of the total value of their imported televisions is quite high, particularly since this includes the cost of the television.

While these outcomes are influenced by the total cost of any Approved Arrangement and the allocation method for those costs, the final incidence is determined by the ability of importers to pass costs through to household consumers.

To accurately answer whether this can be done would require more analysis about the nature of the market for televisions which is beyond the scope of this report (in economic parlance we would need to know the price elasticity for the demand for importers' services for televisions).

We can nonetheless draw on economic theory to provide guidance as to what can reasonably be expected to occur. All things being equal, then economic theory shows that unless the market for importers' services was perfectly inelastic then importers would bear some of the estimated costs.

The difference with this analysis however, is that once the Scheme/ Approved Arrangement is in place, consumers will not only be purchasing a television and computer – they may be contributing to higher recycling/recovery of end of life items. The Decision RIS showed that consumers will 'demand' more than just televisions, computers and peripherals, but are also willing to pay for guaranteed levels of recycling. This willingness to pay is likely to be greater than the cost of recycling.

Based on the willingness to pay findings it is not unreasonable to expect that demand for recycling services (reflected by consumer willingness to pay) will exceed the cost of those recycling services to liable parties. In short, costs being passed through to consumers is a reasonable expectation given consumers' willingness to pay.

From an economic point of view, the cost of the arrangement results in a shift to the left (or up) of the supply curve for television importer services – and all things being equal and so long as the demand for television importer services is not perfectly in-elastic – then importers would incur some of the costs of an Approved Arrangement. This however, will be countered by a shift upwards of the demand curve for television importers services, reflecting consumer willingness to pay. Given that the shift in the demand curve (i.e. the willingness to pay) is likely to be greater than the shift in supply curve (i.e. the cost to recycle/recover televisions for importers/liable parties) then it is reasonable to conclude that pass through of costs can be expected.

Given the likely pass through of costs to consumers there is not expected to be any long term impact on the market for television importation services and hence minimal adverse impact on small

individual importers. On this basis PwC believes that the threshold for televisions could be lowered without adverse long term impact on competition.

Recommendation #6: It would not be unreasonable for the threshold for televisions to be reduced to as low as 1,000 units (from the current threshold of 5,000 units). At this threshold, the Government would incur additional administration costs (relative to the current 5,000 unit threshold) of less than \$11,000 per annum.

Analysis of computer thresholds

As was the case for televisions, a number of scenarios have been considered for the importation of computer and computer peripherals.

The current computer threshold of 5,000 units covers computers, printers, MFDs and other peripherals (such as keyboards, mice, circuit boards, hard drives, speakers, web cams and internal power supplies) which differ greatly in terms of their value and weight. For example, in 2008:

- One company imported 10,000 circuit boards, which only had a reported total value of \$166, while another company imported 100 desktops with a total value of over \$100,000
- The average weight of CPUs is negligible (0.05 kg), while complete PCs weigh an average of 14.1 kg (see Appendix B).

The tariff codes used to distinguish between 'computers, printers and MFDs' and 'other computer peripherals' is presented in Appendix D.

Consistent with the preliminary analysis of television thresholds above, analysis will be undertaken on arrangement costs as a proportion of import value of the smallest importers (by units) above the relevant thresholds, with market share calculated based on the value of units imported in 2007/08. To reflect the differences in value and weight of computer products, separate thresholds will be analysed for:

1. Computers, printers and MFDs
2. Other computer peripherals

Although having separate thresholds for computers/printers/MFDs and other peripherals means that products are more similar in terms of size, they differ in terms of their unit values and weights, as outlined in Table B.1 (Appendix B). For example, the average unit value of products categorised as computers, printers or MFDs ranges from \$227 for flat panel computer monitors to \$926 for computer desktops. The average weight per unit ranges from 2.5 kg for laptops to 16.9 kg for CRT monitors. Even within product/tariff code groupings, value and weight will differ depending on factors such as the brand, quality or features of the product.

The import share component of the industry association funding models for computer products applied average weight assumptions from the Decision RIS (Appendix B) to ACS data on units.

Computers, printers and multi-function devices

Scenario for computer, printer and multi-function device thresholds assuming only variable fees (based on market share by value)

Table 15 examines the arrangement costs (based on market share by value) of the importer of the smallest volume of computer, printer and MFD imports above the respective thresholds. There is some volatility in the value of imports for each individual importer given that the thresholds cover a number of products/tariff codes.

Reducing the threshold from 5,000 units to 3,000 units increases the smallest importer's arrangement costs as a proportion of import value from 0.9% to 1.7%, which is not material. Although the arrangement costs as a proportion of the value of imports are almost identical for the 200 unit threshold (1.8%), it should be noted that a 200 unit threshold also includes the 1,000 unit importer (3.7%) and the 2,000 unit importer (7.3%).

Though data is not available to know precisely at which point importers may be negatively affected, it appears not an unreasonable assumption to consider that the importer examined for the 2,000 unit threshold may not be able to absorb the arrangement costs given they are more than 7% of the value of imports.

Table 15 Arrangement costs and import value of the smallest importer (by units) importing above each individual threshold (computers, printers and MFDs)

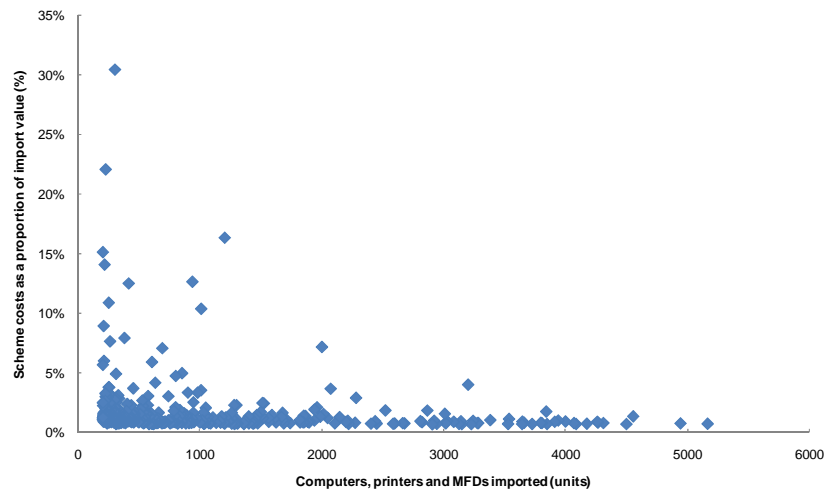
	Threshold (units)							
	No threshold	200 units	500 units	1,000 units	2,000 units	3,000 units	4,000 units	5,000 units
Arrangement costs per importer (\$)	\$1,028	\$1,844	\$5,477	\$1,292	\$1,130	\$1,971	\$9,852	\$21,249
Import value per importer (\$)	\$3,466	\$103,361	542416.28	\$34,952	\$15,380	113649.7	\$1,026,088	\$2,337,010
Arrangement costs per importer as a proportion of import value (%)	29.6%	1.8%	1.0%	3.7%	7.3%	1.7%	1.0%	0.9%

Source: ACS

In general, arrangement costs as a proportion of the value of imports moves as would be expected (i.e. value increases as the number of units increases). As illustrated in Figure 14, arrangement costs begin to stabilise between 1,000-3,000 units. (i.e. the smallest importers above a threshold of 3,000 units do not face arrangement costs as a proportion of the value of imports that are disproportionately higher than other liable parties).

This appears to be the level when there ceases to be a market distortion between different importer sizes.

Figure 14: Arrangement costs as a proportion of import value for importers of 200 to 5,000 units (computers, printers and MFDs)



The incremental cost for Government for each of the respective thresholds is set out below, which highlights that at a threshold of 3,000 units the incremental cost for Government is a modest \$19,000. If the threshold was further reduced to either 2,000 or 1,000 units, Government costs would increase to \$32,000 (i.e. an additional \$13,000) and \$77,000 (i.e. an additional \$57,500) respectively.

Table 16: Incremental Government scheme administration costs relative to the current threshold of 5,000 units (computers, printers and MFDs)

	Threshold (units)							
	No threshold	200 units	500 units	1,000 units	2,000 units	3,000 units	4,000 units	5,000 units
Importers (2008)	4541	504	322	220	139	115	89	80
Incremental Government scheme administration costs (\$)	\$2,442,602	\$232,159	\$132,506	\$76,656	\$32,305	\$19,164	\$4,928	\$0

Source: ACS

Based on the analysis of 2008 ACS data and consideration of the tradeoffs identified in Chapter 2, it does not appear unreasonable to reduce the threshold to as low as 3,000 units based on consideration of the following:

- The smallest individual importer (by units) above a 3,000 unit threshold incurs arrangement costs (based on their own market share by value) that are 1.7% of the value of their imports compared to more than 7.3% if the threshold is reduced to 2,000 units. Thus, the smallest importer above a 3,000 unit threshold is likely to be able to absorb the arrangement costs even if they are subsequently passed on in the form of higher prices
- Reducing the threshold from 5,000 units to 3,000 units increases Government scheme administration costs by \$19,000 compared to

\$32,000 (i.e. an additional \$13,000) with a threshold of 2,000 units and \$77,000 (i.e. an additional \$57,500) with a threshold of 1,000 units

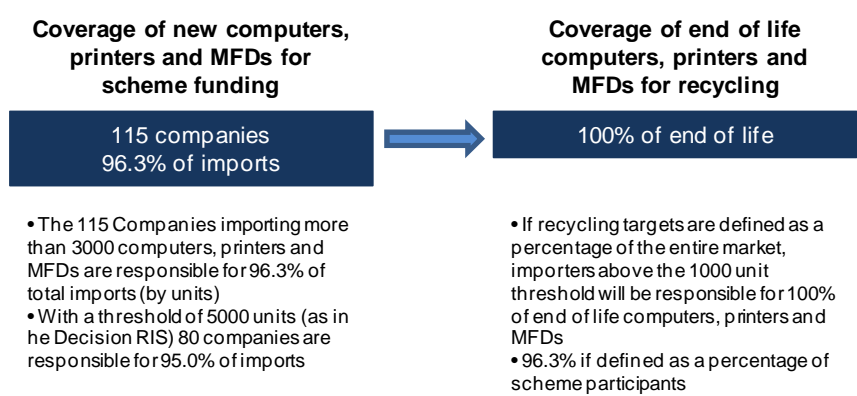
- Arrangement coverage will increase from the current level of 95% with a threshold of 5,000 units to 96%
- Reducing the threshold from 5,000 units to 3,000 units will increase scheme costs to society by \$35,000 per year as 35 additional importers will incur fixed compliance costs (e.g. for education and reporting). This increases to \$59,000 per year (i.e. an additional \$24,000 per year) if the threshold is further reduced to 2,000 units and \$140,000 (i.e. an additional \$80,000 per year) if the threshold is reduced to 1,000 units.

In summary, reducing the threshold for computers, printers and MFDs from 5,000 units to 3,000 units will:

- **Make arrangement funding by importers more equitable:**⁵⁷ The number of importers facing obligations under the arrangement increases from 80 to 115 (based on 2007/08 data), with the market coverage of imports increasing from 95.0% to 96.3% of units
- **Have no impact on recycling outcomes:** Assuming recycling targets are defined as a percentage of the entire market, importers will have responsibility for 100% of end of life computers, printers and MFDs (i.e. including those imported by companies exempted from the scheme for being below the threshold)
- **Have no impact on the scheme's net benefits to society:** Changing the threshold has no impact on the net costs of the scheme to society⁵⁸ (only the distribution of those costs) and no impact on recycling outcomes (as importers are responsible for 100% of end of life computers, printers and MFDs).

⁵⁸ There will be an increase in total importer compliance costs (\$35,000 in 2007/08) and Government administration costs (\$19,000 in 2007/08) due to an additional 35 companies being included in the arrangement. Costs may increase for companies that face obligations for both computers, printers and MFDs and computer peripherals (i.e. they are above the threshold for both groups of computer products) as there will be duplication of compliance costs such as reporting (estimated to cost \$1,000 per importer). However, these costs are not significant when compared to the net costs to society, which were estimated in the Decision RIS to total \$872.8 million (present value) over 20 years. In addition, this cost increase will be offset by cost savings of over \$235,000 from increasing the threshold for computer peripherals (discussed below). See PwC (2009), *Decision RIS: Televisions and Computers*, prepared for the EPHC, p 117.

Figure 15: Coverage of new and end of life computers with a threshold of 3,000 computers, printers and MFDs



Note: Arrangement coverage is different from a recycling target. Arrangement coverage refers to the proportion of imports included in the arrangement. A recycling target refers to the proportion of units that the Government is aiming to be collected for recycling. For example 100% coverage (above) indicates that 100% of units imported are available to recycle, even if only 80% are recycled based on the Government’s recycling target.

Scenario for computer, printer and multi-function device thresholds based on mix of fixed and variable fees (indicative industry funding models)

Industry association representatives have provided indicative funding models to DSEWPaC. These were described in Section 3.2 and are assessed below for computer importers. This analysis therefore provides an alternative view point than that presented above, through the inclusion of a fixed fee, in addition to a variable component based on market share.

Table 17 presents the arrangement costs and import value of the smallest computer, printer and MFD importer (by units) importing above the relevant thresholds, based on indicative industry funding proposals. As discussed above, the market share component of the funding models is based on assumed weight per unit given that weight per unit differs significantly between tariff codes.

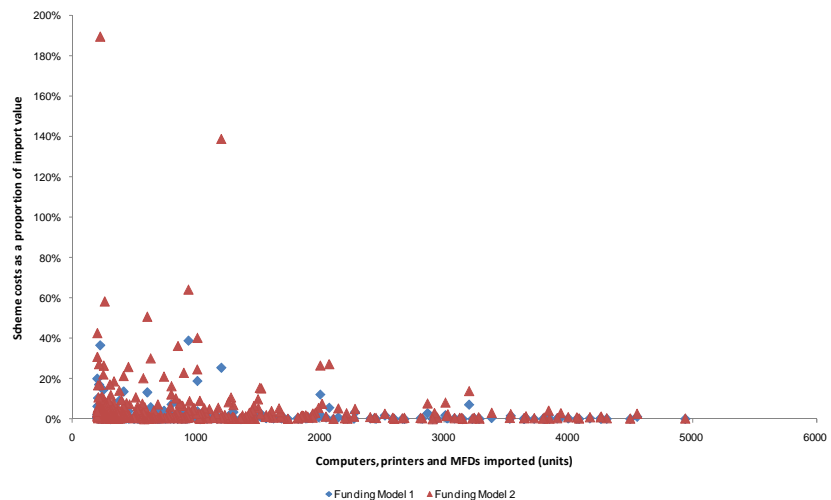
The inclusion of a fixed fee component has a disproportionate impact on importers of a relatively smaller number of units, and this impact is in proportion to the magnitude of the fixed fee. However, Figure 16 illustrates that for individual importers of more than 3,000 units, there is still a convergence in arrangement costs (based on their market share by value) as a proportion of the value of their imports (i.e. the smallest importers above a threshold of 3,000 units do not face arrangement costs as a proportion of the value of imports that are disproportionately higher than other members of the arrangement). As a result, the indicative industry association funding models appear to support the preliminary recommendation to reduce the threshold for computers, printers and MFDs from 5,000 units to 3,000 units.

Table 17: Arrangement costs and import value of the smallest importer (by units) importing above each individual threshold based on indicative industry funding models (computers, printers and MFDs)

	Threshold (units)							
	No threshold	200 units	500 units	1,000 units	2,000 units	3,000 units	4,000 units	5,000 units
Market share (value)	29.6%	1.8%	1.0%	3.7%	7.3%	1.7%	1.0%	0.9%
Market share (weight)	25.9%	16.5%	0.2%	3.2%	1.1%	1.7%	0.1%	0.4%
Funding Model 1 (weight)	31.7%	20.1%	0.3%	3.9%	1.3%	1.8%	0.2%	0.5%
Funding Model 2 (weight)	79.1%	30.8%	0.4%	24.7%	7.6%	8.3%	0.9%	0.8%

Source: ACS

Figure 16: Arrangement costs as a proportion of import value for importers of 200 to 5,000 units based on indicative industry funding models (computers, printers and MFDs)



Source: ACS

Other computer peripherals

Scenario of computer peripheral thresholds assuming only variable fees (based on market share by value)

Table 18 examines the arrangement costs (based on market share by value) of the importer of the lowest volume of other peripherals above the respective thresholds. Increasing the threshold from 5,000 units to 15,000 units will decrease the arrangement costs of the smallest importer (in terms of units) importing above the relevant thresholds from 4.3% to 2.6%.

Table 18: Arrangement costs and import value of the smallest importer (by units) importing above each individual threshold (computer peripherals only)

	Threshold (units)						
	No threshold	5,000 units	10,000 units	15,000 units	20,000 units	25,000 units	30,000
Arrangement costs per importer (\$)	\$1,019	\$1,241	\$1,131	\$1,542	\$1,060	\$6,314	\$4,435
Import value per importer (\$)	\$2,978	\$29,010	\$14,673	\$58,868	\$6,046	\$526,241	\$325,909
Arrangement costs per importer as a proportion of import value (%)	34.2%	4.3%	7.7%	2.6%	17.5%	1.2%	1.4%

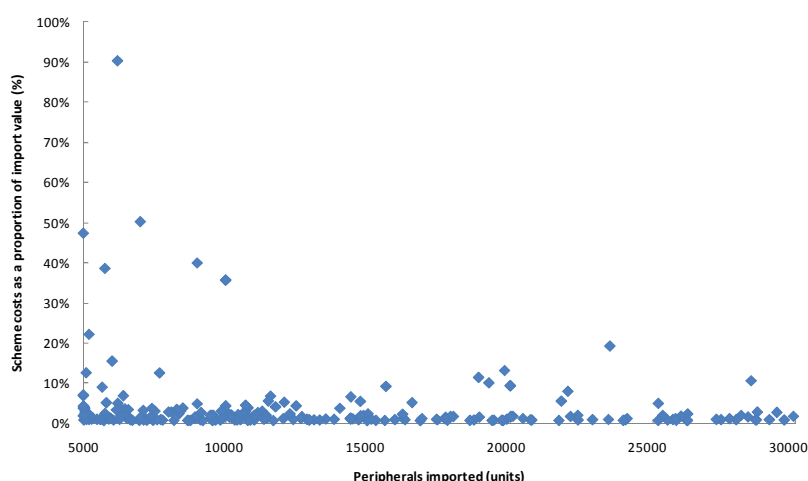
Source: ACS

Note: 'Computer peripherals' includes keyboards, mice, circuit boards, hard drives, speakers, web cams and internal power supplies

In general arrangement costs as a proportion of the value of imports moves as would be expected (i.e. value increases as the number of units increases). As illustrated in Figure 17, arrangement costs begin to stabilise between 10,000-15,000 units. (i.e. the smallest importers above a threshold of 15,000 units do not face arrangement costs as a proportion of the value of imports that are disproportionately higher than other members of the arrangement).

This appears to be the level when there ceases to be a market distortion between different importer sizes.

Figure 17 Arrangement costs as a proportion of import value for all importers of 5,000 units to 30,000 units (other peripherals)



The table below presents the arrangement coverage at each threshold level. With a threshold of 15,000 units, arrangement coverage reduces to 87%. Increasing the threshold further is likely to raise issues of fairness. For example, with a threshold of 30,000 units, more than 20% of imports are excluded from the arrangement. Liable parties would be responsible for funding the products of non-liable parties, which raises issues of fairness.

Table 19: Arrangement coverage (proportion of imports - computers, printers and MFDs)

	Threshold (units)						
	No threshold	5,000 units	10,000 units	15,000 units	20,000 units	25,000 units	30,000 units
Arrangement coverage (%)	100%	94%	90%	87%	84%	82%	78%

Another factor in choosing a threshold, the table below presents the impact of the cost to Government as a result of the compliance activity required at each threshold level. With a threshold of 15,000 units, there would be cost savings of more than \$83,000.

Table 20: Incremental Government scheme administration costs relative to the current threshold of 5,000 units (computer peripherals only)

	Threshold (units)						
	No threshold	5,000 units	10,000 units	15,000 units	20,000 units	25,000 units	30,000 units
Importers (2008)	6528	326	229	174	138	120	95
Incremental Government arrangement administration costs (\$)	\$3,395,879	\$0	-\$53,112	-\$83,227	-\$102,939	-\$112,794	-\$126,483

Source: ACS

Note: 'Computer peripherals' includes keyboards, mice, circuit boards, hard drives, speakers, web cams and internal power supplies

Based on the tables above and analysis of the ACS data, it does not appear unreasonable to increase the threshold to as high as 15,000 units. This would reduce Government scheme administration costs by around \$83,000 per year and maintain arrangement coverage of close to 90%. Higher thresholds do not maintain adequate arrangement coverage to be equitable. For example, with a threshold of 30,000 units, importers responsible for more than 20% of imports are excluded from the arrangement.

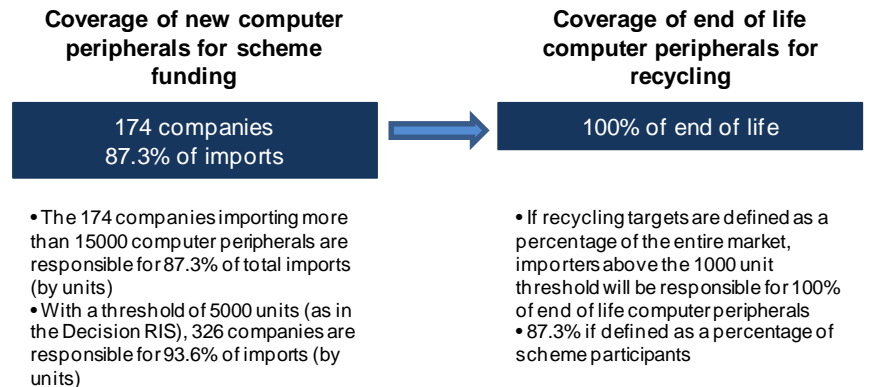
In summary, increasing the threshold for computer peripherals from 5,000 units to 15,000 units will:

- **Make arrangement funding by importers less equitable:**⁵⁹ The number of importers facing obligations under the arrangement decreases from 326 to 174 (based on 2007/08 data), with the market coverage of imports decreasing from 93.6% to 87.3% of units
- **Have no impact on recycling outcomes:** Assuming recycling targets are defined as a percentage of the entire market, importers will have responsibility for 100% of end of life computer peripherals (i.e. including those imported by companies exempted from the arrangement for being below the threshold)
- **Have no impact on the scheme's net benefits to society:** Changing the threshold has no impact on the net costs of the scheme to society⁶⁰ (only the distribution of funding of those

⁶⁰ There will be a decrease in total importer compliance costs (\$152,000) and Government administration costs (\$83,000) due to 152 fewer companies being

costs) and no impact on recycling outcomes (as importers are responsible for 100% of end of life computer peripherals).

Figure 18: Coverage of new and end of life computer peripherals with a threshold of 15,000 computer peripherals



Note: Arrangement coverage is different from a recycling target. Arrangement coverage refers to the proportion of imports included in the arrangement. A recycling target refers to the proportion of units that the Government is aiming to be collected for recycling. For example 100% coverage (above) indicates that 100% of units imported are available to recycle, even if only 80% are recycled based on the Government's recycling target.

Analysis of thresholds for other peripherals based on mix of fixed and variable fees (indicative industry funding models)

Table 21 presents the arrangement costs and import value of the smallest 'other peripheral' importer (by units) importing above the relevant thresholds, based on indicative industry association funding proposals. The inclusion of a fixed fee component has a disproportionate impact on importers of a relatively smaller number of units, and this impact is in proportion to the magnitude of the fixed fee.

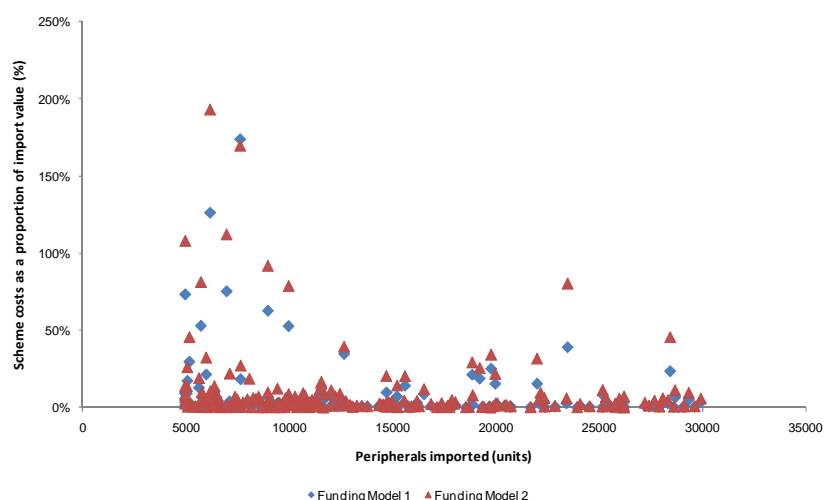
included in the arrangement. However, costs may increase for companies that face obligations for both computers, printers and MFDs and computer peripherals (i.e. they are above the threshold for both groups of computer products) as there will be duplication of compliance costs such as reporting (estimated to cost \$1000 per importer).

Table 21: Arrangement costs and import value of the smallest importer (by units) importing above each individual threshold based on indicative industry funding models (other peripherals)

	Threshold (units)						
	No threshold	5,000 units	10,000 units	15,000 units	20,000 units	25,000 units	30,000 units
Market share (value)	34.2%	4.3%	7.7%	2.6%	17.5%	1.2%	1.4%
Market share (weight)	34.3%	4.1%	3.7%	0.6%	3.0%	0.3%	0.8%
Funding Model 1 (weight)	42.4%	5.0%	4.3%	0.7%	3.3%	0.3%	0.9%
Funding Model 2 (weight)	79.1%	7.5%	6.3%	0.9%	4.0%	0.4%	1.1%

Source: ACS

Figure 19: Arrangement costs as a proportion of import value for importers of 5,000 to 30,000 units based on indicative industry funding models (other peripherals)



While the initial impact on computer importers is lower than that for television importers, the conclusions reached around the ability to pass through the cost of the arrangement to consumers also holds for computers and computer peripherals. That is, the costs are expected to be passed through and therefore in the long term are unlikely to impact on the market (and hence competition) for import services for computers.

Recommendation #7: It is not unreasonable to consider separate thresholds for computers, printers and MFDs and other computer peripherals. In addition, it is not unreasonable to reduce the threshold for computers, printers and MFDs to as low as 3,000 units and to increase the threshold for other peripherals to as high as 15,000 units per year.

4.4 Competition between importers

Television and computer importers that fall below the threshold do not incur the costs of complying with the arrangement but are able to take advantage of higher prices up to the level of the threshold. At first glance this might be thought to create a competitive advantage relative to liable parties. Given these cost differences, the market share of non-participating importers are likely to grow (through entry of many new small importers) at the expense of firms included in the arrangement.⁶¹ The ability of these excluded firms to have a significant impact on competition will depend on their market power and the proportional cost of the arrangement. A relevant benchmark to determine whether the excluded firms will have sufficient market power to have a detrimental impact on competition is provided by the ACCC Merger Guidelines.⁶² Although these guidelines are not triggered because the excluded firms are not merging, the guidelines provide useful insights into the impact of market share on competition.

The ACCC Merger Guidelines state that companies with a post merger market share of 20% are encouraged to notify the ACCC well in advance of completing a merger where the products are either substitutes or compliments and the merged firm will have a post-merger market share of greater than 20%. This threshold has been established by the ACCC to limit the merger reviews it conducts to mergers which may potentially raise competition concerns. The notification threshold is set at a level that reflects the ACCC's experience in determining which mergers are more likely to raise competition concerns and therefore require further investigation.⁶³

Table 22 outlines the coverage of the market (units) at different threshold levels. Under the current threshold of 5,000 units, the importers that are exempted from the arrangement only account for between 2.5%-6.4% of the market. With the recommended thresholds, this changes to 0.9%-12.7% of the market. **This is substantially lower than the ACCC merger notification threshold of 20% meaning that the market share of the excluded firms is likely to be too small to have a detrimental impact on competition.**

⁶¹ EPHC (2010) *Consultation Regulatory Impact Statement – Used Packaging Materials*, p 20

⁶² ACCC (2008) *Merger guidelines*

⁶³ ACCC (2008) *Merger guidelines*, p 8

Table 22: Selected threshold levels and associated percentage coverage

	Current thresholds		Recommended thresholds	
	Threshold level (units)	Coverage (% of units, 2008)	Threshold level (units)	Coverage (% of units, 2008)
Televisions	5,000	97.5%	1,000	99.1%
Computers, printers and MFDs	5,000	95.0%	3,000	96.3%
Computer peripherals	5,000	93.6%	15,000	87.3%

Source: PwC 2009, *Decision RIS: Televisions and Computers*, prepared for the EPHC, Appendix F, p 208

Note: 'Computer peripherals' includes fans, keyboards, mice, circuit boards, hard drives, speakers, web cams, power supplies and power cords

4.5 Possibility of 'gaming'

Any threshold may encourage importers to structure themselves or to try to game their activities to be below the threshold by either:

- Setting up multiple companies to import below the threshold
- Setting up new companies and winding them up before making payments
- Using contracts and other importers
- Misrepresenting the number of units that they are importing.

The costs of setting up and administering legitimate companies could reasonably be hundreds of thousands or even millions of dollars depending on how the company is set up and its purpose. However, if someone tries to game the threshold by setting up shelf companies, then the least cost estimate could reasonably be thought to be in the following range.

- The costs of setting up a company generally range from around \$1,500-\$2,000 and include:
 - Creating a new company/buying a new company and Registering with ASIC (\$400)
 - Registering for an ACN, ABN and tax file number
 - Registering for a business name
 - Registering for GST.⁶⁴
- Ongoing company administration costs generally cost in excess of \$1,000 and include annual company returns, business activity statement and company tax returns.⁶⁵

⁶⁴ Commonwealth Bank website, Your business structure, available at <<http://www.commbank.com.au/business/betterbusiness/starting-a-business/choosing-business-structure/>>, accessed 3 May 2010

⁶⁵ Commonwealth Bank website, Your business structure, available at <<http://www.commbank.com.au/business/betterbusiness/starting-a-business/choosing-business-structure/>>, accessed 3 May 2010

Companies may seek to set up two or more companies, each importing less than the threshold, if their arrangement costs are greater than the costs of setting up and administering the companies. For example, if there is a threshold of 5,000 units, an importer of 5,000 units will set up an additional company if the set up and administration costs (at least \$2,500) are less than the arrangement compliance costs for 5,000 units. Similarly, an importer of 50,000 units is likely to set up 10 additional companies if the costs of doing so (at least \$25,000) are less than the arrangement compliance costs for 50,000 units.

Table 23 presents the annual arrangement costs for each threshold level of units, assuming arrangement costs are funded in proportion to market share by value (except for importer compliance costs, which are fixed costs incurred by liable parties regardless of the number of units imported). With thresholds of 5,000 there might be an incentive to set up multiple companies (each importing below the threshold) to avoid participation in the arrangement as the arrangement costs exceed the minimum company set up and administration costs of \$2,500. The strongest incentive for gaming occurs in a television arrangement with a threshold of 5,000 units. A participating company importing 5,000 units would incur arrangement costs of \$120,000 compared to company set up and administration costs of \$2,500.

Lowering the threshold for televisions, computers, printers and MFDs significantly reduces the incentive for gaming. Raising the threshold for computer peripherals increases the incentive for gaming, although the avoided arrangement costs from gaming are still lower than for televisions, computers, printers and MFDs (meaning that there is still less incentive for these companies to game).

Table 23: Annual arrangement compliance costs at different threshold levels

	Current thresholds		Recommended thresholds	
	Threshold (units)	Arrangement costs (\$)	Threshold (units)	Arrangement costs (\$)
Televisions	5,000	\$120,228	1,000	\$11,019
Computers, printers and MFDs	5,000	\$21,249	3,000	\$1,971
Computer peripherals	5,000	\$1,241	15,000	\$1,542

The company costs of \$2,500 are conservative and represent the lower bound of potential cost estimates. Company set up costs can be up to \$2,000. Ongoing company administration costs are at least \$1,000 and are sometimes significantly higher than this (e.g. \$5,000 for an audit and \$10,000 for ongoing administration). If company set up and administration costs exceed \$24,800, there will be no incentive for gaming in any of the arrangements. Alternatively, it is possible to include anti-gaming provisions in the regulation.

Recommendation #8: If the incentive for gaming is to be reduced, the threshold for all products (particularly televisions) could be lowered further, although this would increase the likelihood that smaller importers would be forced to exit the market

5 Recommendations

This chapter provides recommendations on the criteria and levels of thresholds to be implemented in the television and computer collection and recycling scheme and identifies any issues that require further consideration.

Threshold recommendations

The box below summarises PwC's core recommendations relating to thresholds for the Scheme.

PwC's analysis has focused on the volume and value of units imported. This approach however, leaves open the possibility that there are examples where a small volume importer is not a small business. Nonetheless, the use of 'small volume importer' data is helpful as it provides insight into the initial impact of lower or changed thresholds and how that might influence the ability of small volume importers to absorb the cost of the arrangement.

In considering the issues raised by some members of the television and computer industry associations, combined with the range of other impacts and tradeoffs affecting threshold levels, we provide the following recommendation:

The thresholds could be changed from the previous Decision RIS threshold of 5,000 units for all products to as low as 1,000 units for televisions; as low as 3,000 units for computers, printers and multi-function devices (MFDs); and as high as 15,000 units for other peripherals

Other recommendations relating to specific factors impacting thresholds –are:

- 1 Thresholds are more likely to be cost effective if calculated on an annual basis as opposed to more frequently. This will minimise the compliance costs of business and the administration costs of a liable party and the Government.
- 2 Arrangement administrators should fund the arrangement based on a company's import share and should reduce/minimise arrangement costs wherever possible. This will reduce the financial burden on smaller businesses and allow a lower threshold to be implemented.
- 3 Recycling targets for each Approved Arrangement should be based on the percentage of the entire market (including exempted importers/manufacturers) in terms of units
- 4 The Government should maintain its position that there is a general obligation on for all Approved Arrangements to accept any end of life product regardless of brand.

- 5 The threshold criteria should be units because data on weight is not uniformly collected by the ACS for television and computer products, and value is subjective and fluctuates over time.
- 6 If the incentive for gaming⁶⁶ is to be reduced, the threshold for all products (particularly televisions) could be lowered further, although this would increase the likelihood that smaller importers would be forced to exit the market

The recommendations above reflect the particularities of the television and computer industries. Market dynamics and the setting of thresholds will be different for other products and materials.

⁶⁶ Any threshold may encourage importers to structure themselves or to try to 'game' their activities to be below the threshold by either setting up multiple companies to import below the threshold, setting up new companies and winding them up before making payments, using contracts and other importers or misrepresenting the number of units that they are importing.

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Appendix A Threshold coverage and number of companies

Table A.1 shows the resulting percentage coverage (% of units imported by companies) and number of companies included in the arrangement at the three different threshold levels selected for threshold analysis in the Decision RIS. The coverage and number of companies is based on application of the thresholds to 2008 Customs data.⁶⁷

Table A.1: Selected threshold levels and associated percentage coverage and number of companies

	No threshold	99.5% of units			98% of units			95% of units		
	Companies (number, 2008)	Threshold level (units)	Coverage (% of units, 2008)	Companies (number, 2008)	Threshold level (units)	Coverage (% of units, 2008)	Companies (number, 2008)	Threshold level (units)	Coverage (% of units, 2008)	Companies (number, 2008)
Televisions	458	400	99.6%	79	2,000	98.5%	45	5,000	97.5%	37
Computers	9,999	200	99.5%	1,945	1,000	98.3%	997	4,000	95.7%	503
VDUs	1,874	100	99.6%	493	500	98.6%	202	2,000	96.9%	94
All products	10,194	200	99.6%	1,985	1,000	98.4%	1,023	5,000	95.3%	460

Source: PwC 2009, *Decision RIS: Televisions and Computers*, prepared for the EPHC, Appendix F, p 208

⁶⁷ Customs data was provided for 'companies' and for 'individuals'. Customs were not able to provide data for these individuals to enable the threshold analysis at the product group level. However, across all import codes individuals imported on average 4-5% of total units. The remaining import threshold analysis therefore excluded any units imported by individuals.

Appendix B Value and weight of computers and peripherals

Table B.1: The average free on board (FOB) value of imports - 2007/08

Product	Product Category	Average FOB value per unit	Average weight per unit (kg)
Television - Analogue	television/VDU	\$510	25.0
Television - Digital	television/VDU	\$634	25.0
Computer display - flat panel	Computer/VDU	\$227	5.5
Computer display - CRT type	Computer/VDU	\$375	16.9
Computer desktops and similar - CPU	Computer	\$926	0.05
Computer desktops and similar - Complete PC	Computer	\$777	14.1
Computer mobile units - Laptops and portables	Computer	\$899	2.5
Computer peripherals - Keyboards	Computer	\$23	0.5
Computer peripherals - Mouse	Computer	\$15	0.1
Computer peripherals - Hard drives	Computer	\$129	0.1
Computer peripherals - Scanners	Computer	\$282	1.0
Computer peripherals - Speakers	Computer	\$13	0.5
Computer peripherals - Web cam	Computer	\$33	0.2
Computer peripherals - Power cords	Computer	\$17	0.5
Computer peripherals - Internal power supplies	Computer	\$82	0.2
Computer peripherals - External power supplies	Computer	\$30	0.3
Computer peripherals - Fans	Computer	\$36	0.2
Computer peripherals - Misc.	Computer	\$86	0.2
Printer	Computer	\$289	5.0
MFD	Computer	\$193	5.0

Source: DFAT STARS Database; consistent with ABS Cat No 5368.0, December 2008 data; Hyder (2009) Consultation RIS – Televisions and Computers – Report 1, prepared for PwC, February, p 10

Appendix C ACS data and definitions

The import tariff codes and their relationship with the presentation of results in the four categories throughout this report – televisions, computers, visual display units and televisions and computers are set out in the following table.

Table C.1 Television and Computer Imports Codes
Source: DSEWPaC

Import tariff code (10-digit)	Description		Televisions	Computers	Visual display units	Televisions and computers
8528.72.00	Televisions	Colour	✓		✓	✓
8528.73.00.35		Black and white	✓		✓	✓
8528.51.00/32	Computer displays	Flat panel		✓	✓	✓
8528.51.00/33		Other used with a computer		✓	✓	✓
8528.41.00/10		CRT type		✓	✓	✓
8471.50.00/23	Computer desktops and similar	CPU		✓		✓
8471.41.00/21						
8471.49.00/22		Complete PC		✓	✓	✓
8471.30.00/20	Computer mobile units	Laptops and portable		✓		✓
8471.60.00/55	Computer peripherals	Keyboards		✓		✓
8471.60.00/91		Joystick/game pads		✓		✓
8471.60.00/92		Mouse/trackball		✓		✓
8471.70.11/20		CD drives		✓		✓
8471.70.00/25		DVD drives		✓		✓
8471.70.00/74		Hard drives		✓		✓
8471.70.00/75		Floppy drives		✓		✓
8471.60.00/95		Scanners		✓		✓
8518.29.90/23		Speakers		✓		✓
8525.80.10/15		Web cams		✓		✓
8544.42.19/02		Power cords		✓		✓
8504.40.30/59		Internal power supplies		✓		✓
8504.40.90/80		External power supplies		✓		✓
8414.59.90/52		Fans		✓		✓
8473.30.00/62		Cards		✓		✓
8473.30.00/68		Motherboard		✓		✓
8443.32.00/71	Personal or desktop laser and inkjet printers	Ink-jet		✓		✓
8443.32.00/72		Dot matrix		✓		✓
8443.32.00/74		Laser		✓		✓
8443.31.00/61	Multi function device (MFD)	Ink-jet		✓		✓
8443.31.00/62		Dot matrix		✓		✓
8443.31.00/64		Laser		✓		✓

Appendix D Tariff codes for the three proposed thresholds

Table D.1: Import tariff codes for the three proposed threshold categories

Import tariff code (10-digit)	Description		Televisions	Computers, printers and MFDs	Computer peripherals
8528.72.00	Televisions	Colour	✓		
8528.73.00/35		Black and white	✓		
8528.51.00/32	Computer displays	Flat panel		✓	
8528.51.00/33		Other		✓	
8528.41.00/10		CRT type		✓	
8471.50.00/23	New computer desktops	CPU		✓	
8471.41.00/21		Desktops		✓	
8471.49.00/22		Complete PC		✓	
8471.30.00/20	Computer mobile units	Laptops and portable		✓	
8443.32.00/71	Personal or desktop laser and inkjet printers	Ink-jet		✓	
8443.32.00/72		Dot matrix		✓	
8443.32.00/74		Laser		✓	
8443.31.00/61	Multi function device (MFD)	Ink-jet		✓	
8443.31.00/62		Dot matrix		✓	
8443.31.00/64		Laser		✓	
8471.60.00/95	Computer peripherals	Scanners		✓	
8471.60.00/55	Computer peripherals	Keyboards			✓
8471.60.00/91		Joystick/game pads			✓
8471.60.00.92		Mouse/trackball			✓
8471.70.11/20		CD drives			✓
8471.70.00/25		DVD drives			✓
8471.70.00/74		Hard drives			✓
8471.70.00/75		Floppy drives			
8471.60.00/95		Scanners			
8518.29.90/23		Speakers			✓
8525.80.10/15		Web cams			✓
8544.42.19/02		Power cords			✓
8504.40.30/59		Internal power supplies			✓
8504.40.90/80		External power supplies			✓
8414.59.90		Fans			✓
8473.30.00/62		Miscellaneous cards			✓
8473.30.00/68		Motherboard			
8544.42.00/02		Speakers			✓