



BUSTED! **THE 'MOBILE MUSTER' MYTH EXPOSED**

MOBILE PHONE RECYCLING SURVEY



Total Environment Centre Inc

www.tec.org.au

July 2007



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Mobile phones and their accessories contain a range of hazardous substances including toxic heavy metals such as cadmium, lead, nickel, mercury, lithium and arsenic. They also include non-renewable resources such as gold, silver, copper and plastic. When mobile phones are dumped in landfill, the toxic substances can leach into groundwater, rivers and streams, threatening the health of humans and ecosystems.

To date, over 30 million mobile phones have been sold in Australia, and 8 million more are being sold each year. Yet less than 3% are recycled. With an average life-span of 18 months, this means that millions of mobile phones are making their way to landfills across Australia, putting the environment and community at risk.

The mobile phone industry has not taken sufficient steps to ensure that phones are recycled, despite the establishment of the voluntary recycling program 'Mobile Muster' by the Australian Mobile Telecommunications Association (AMTA). The Association claims that their voluntary program, which aims to increase recycling through raising public awareness, will do the job and that the industry does not need to be regulated to improve recycling volumes.

This survey set out to test this claim by evaluating the effectiveness of Mobile Muster in the City of Sydney area, and the performance of retailers who say they are committed to the program.

The survey results show the Mobile Muster scheme is completely inadequate for the task of recovering a significant number of the phones reaching their 'end of life' stage:

- The scheme's coverage is extremely poor; fewer than 20% of mobile phone retailers participate.
- The performance of those retailers participating in the scheme is inconsistent and lacking in many aspects, such as:
 - The recycling bin is placed in a visible position in only 38% of stores
 - Promotional and/or educational material is found in only 29% of stores

There are a range of other serious problems with Mobile Muster:

- Full audits are not published, with reporting only partial and not publicly available.

AMTA states that they regularly audit mobile phone store participation. If so, where are the results of these audits? What do they show? While AMTA claims it has increased visibility, this survey provides completely different results.
- The 3% recycling rate is extraordinarily low.

This low recovery rate achieves minimal environmental benefits, and does not promote development of better collection and recycling infrastructure. If mobile phones were recovered by the millions, demand would be created for new and improved recycling facilities. This would in turn reduce the recycling cost per phone, making recycling more cost effective.

AMTA recently quoted an increase of 16.5% in the number of units collected from the previous year. This puts a false positive spin on data that also shows the percentage of recovered units has in fact dropped. While in absolute terms the

number of units recycled has increased, this has not been proportionate to the increase in the number of new phones sold. AMTA even admit this drop in the recycling rate on their website, providing the current 3% recycling rate compared to 4% the year before.

- The scheme is not cost-effective.

The net cost for collection and recycling is **\$14 per phone.**¹

This is compared to alternative schemes such as the Aussie Recycling Program, endorsed by Clean-Up Australia, which offers **a net gain of \$3-\$5 per phone** achieved through refurbishment and re-sale of donated phones.

- The scheme is claimed to be 'industry funded'. However, invariably the **costs are passed onto the consumer.**
- Mobile Muster uses unreliable surveys to play down the extent of the problem.

Mobile Muster claims that most old mobile phones are sitting safely in drawers. But the phone surveys which were used to reach this conclusion are unreliable. Surveys of self-reported behaviour are known to be skewed by the individual's idea of what constitutes good behaviour, rather than what they actually do.

- AMTA's claims to have increased the visibility of the Mobile Muster, are misleading.

AMTA cites the example of the April 2007 Vodafone store catalogue to show that advertising of Mobile Muster has increased.

However, when checked, this advertisement takes up less than 1% of the total area of the six page catalogue and is quite inconspicuous.

- AMTA's claim that they have increased the number of drop off points over the last year is misleading.

AMTA's claim is merely based on the 'Number of Registered Mobile Muster Collection Points'. However, TEC's survey shows that the number of registered stores is not indicative of the actual number of collection points.

Extrapolating the TEC survey outcomes to a national scale - of the 1646 collection points nationwide, it is likely that only 625 (38%) actually have a visible recycling bin. This means that only 625 bins are supposed to cater for over 5.3 million phones replaced annually in Australia as well as the 'stock' of 13 million hoarded unused phones.

Clearly there is a need to improve on the industry's current 3% recovery rate. The overall poor performance is evidence that voluntary measures are insufficient and that a regulated Extended Producer Responsibility scheme is urgently needed.

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1.1 Social, environmental and economic impacts

The disposal of mobile phones in Australia is a problem that has been largely underestimated by the industry and regulatory bodies. Already over 30 million phones have been sold in Australia, and another 8 million new ones are sold every year. The rapid development of new technology and the nature of mobile phone contracts, which encourage regular replacement, have led to the average life expectancy of a mobile phone being only 18-24 months². This represents a significant toxic waste legacy that is increasing at an alarming rate.

Mobile phones and accessories contain concentrations of a range of hazardous substances including toxic heavy metals, brominated flame retardants (BFRs), perfluoro-octanoic acid (PFOA) and other metals such as cadmium, lead, nickel, mercury, manganese, lithium, zinc, arsenic etc. They also contain non-renewable resources such as gold, copper and plastic.

These heavy metals are persistent and bioaccumulative, that is, they do not degrade in the environment, and instead accumulate in the fatty tissue of organisms. When a mobile phone is disposed to landfill and begins to decompose, a poisonous liquid is formed that can seep into



groundwater and then into rivers and streams³. Once in the environment, the substances accumulate in the food chain, and are associated with a range of adverse human health effects, as seen in the table below, including damage to the nervous system, reproductive and developmental problems, cancer and genetic impacts.⁴

Waste management facilities that produce compost from residual waste are also at risk from contamination by the hazardous substances released from mobile phones. Contamination of compost from mobile phones presents risk to those

| Cadmium | Lead | Lithium |
|---|--|--|
| <p>7th most dangerous substance known</p> <ul style="list-style-type: none"> ■ A carcinogenic ■ A heavy metal harmful to humans and animals if ingested | <p>If lead is absorbed into the bloodstream it can cause:</p> <ul style="list-style-type: none"> ■ serious liver and kidney damage in adults ■ Neurological damage in children | <p>When exposed to water, (which is present in most landfills) the metal can burn, causing underground fires which are difficult to extinguish</p> |

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handling the compost and will results in devaluation of the end product.

In summary; disposing of mobile phones to landfill is wasting valuable non-renewable resources; it is unnecessary occupation of landfill space, creates a legacy of toxic pollution; creates long term risk to the environment and humans, and is simply unsustainable.

Re-use and recycling of mobile phones is the only sensible and responsible alternative and presents many advantages, including:

- Reduces pollution caused by hazardous materials from mobile phones entering the environment from landfill or alternative waste technology plants;
- Reduces the waste and habitat damage associated with the extraction of raw materials for plastics, copper and gold;
- Enables consumers to responsibly dispose of any defunct mobile phones; and
- Reduces disposal rates and impact.



1.2 Policy context

In 1999 The Australian Mobile Telecommunications Association (AMTA) commenced 'Mobile Muster', a voluntary national recycling program.

The stated aim is to prevent mobile phones ending up in landfill.

The program collects and recycles mobile phone handsets, batteries and accessories from a network of mobile phone retailers, local councils, government agencies and businesses drop off points across Australia. The program is funded through a levy of 42 cents placed on each new handset for its potential future recovery. However, the scheme has performed very poorly: while 14 million mobile phones have reached end of life in Australia⁵, industry figures show that only about 1.5 million phones have been recycled through the

scheme, leaving 12.5 million unused phones unaccounted for, and an unknown but potentially large surplus in unused phone levies. A key question is what has happened to this surplus.

Environment Ministers have expressed dissatisfaction with the levels of recovery and recycling of mobile phones. In March 2005, the Victorian Environment Minister threatened the mobile phone industry with regulatory action, calling for a 50% collection target and suggesting a \$5 refundable deposit on phones to encourage their return. At the Environment Protection and Heritage Council (EPHC) meeting in April 2005, Ministers directed their Waste Working Group to negotiate a voluntary agreement with the mobile phone industry with clear targets and deliverables. Since then, little has happened despite the mobile phone sector being strongly encouraged to actively participate in the EPHC process to develop a robust agreement for effective recovery and recycling of mobile phones in Australia as a matter of priority.

In March 2006 the NSW Minister for Environment indicated that he would consider regulatory action if no satisfactory voluntary product stewardship scheme was developed by industry. However, by 31 October 2006, the NSW Minister for the Environment instead sought a report on implementation of the industry's initiatives to increase recycling.

These actions, which continue the general slow progress on producer responsibility schemes and implicitly accept a failed voluntary approach with no economic incentive for consumers to return their phones, are likely to provide little improvement.

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2.1 Aims

The aim of the survey was to evaluate, both quantitatively and qualitatively, the performance of mobile phone retailers committed to recycling in the City of Sydney area, against criteria established by AMTA. The survey also aimed to assess the opportunities for recycling available across the board, to assess the penetration of Mobile Muster into the entire mobile phone retail sector. The results of the survey provide up to date information on the performance of the industry's voluntary scheme.

2.2 Methods

The total number and location of all mobile phone retailers and Mobile Muster registered retailers in the City of Sydney area was established. This figure was obtained through a variety of search methods, including the Yellow Pages, a range of internet search engines, telephone inquiries and visual assessment. The rapid rate of change in the industry makes this figure subject to variation.

Over a three week period a surveyor assessed Mobile Muster registered retailers and other mobile phone retailers, according to set criteria. The results were entered into an online data management tool and analysed. In total, the following were surveyed:

- 28 Mobile Muster registered mobile phone retailers
- 10 Mobile Muster registered ANZ branches and
- 38 non Mobile Muster, mobile phone retailers

The survey criteria included:

- Availability of recycling service
- Availability and visibility of recycling bins
- Amount and visibility of promotional and/or educational material encouraging recycling

- Customer service staff awareness and assistance for mobile phone recycling

Upon entering each store, the surveyor first observed whether a recycling bin could be seen, as well as any promotional/educational material. If a recycling bin was not seen independently, the surveyor asked a staff member for help. The standard question asked by the surveyor was: "I've just bought a new phone, what can I do with the old one?" When recycling was not offered as an option, the surveyor further questioned, "Can the phone be recycled?" and "How?"

2.3 Results

I. Availability of mobile phone recycling services

The total number of mobile phone retailers in the City of Sydney LGA is estimated at 150; of those, 28 are Mobile Muster registered and about 120 mobile phone retailers are not registered, i.e. about 20% of retailers are Mobile Muster registered, as seen in Figure 1 below.

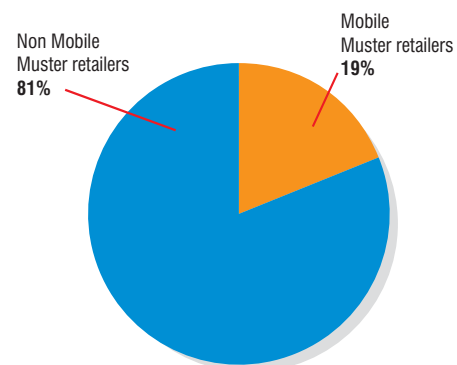


Figure 1. Percentage of retailers covered by the Mobile Muster scheme

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The combined results from both registered and non-registered retailers show that about 25% of all mobile phone retailers offer recycling. Even lower is the percentage of retailers that have a recycling bin that is present and visible in the shop area, only 8%, as seen in Figure 2. These services are supposed to serve a residential population of 150,000 people as well as the city's working population of 350,000, a total of half a million people⁶. The penetration rate of mobile services was estimated at 94% in 2005, with the prediction of an increase to 100% by the end of 2006/7. The number of mobile phone users in the City of Sydney LGA, can therefore be estimated at 500,000. With a replacement rate of a new phone every 18-24 months⁸, there are around 250,000-333,000 mobile phones reaching their 'end of life' in the City of Sydney every year. But, as can be seen from Table 1 below, there are inadequate systems and infrastructure in place to accommodate for all these end of life phones. There are only 39 retailers who offer recycling services and in only 10 of them is the availability of such a service visible to the customer upon arrival in a shop.

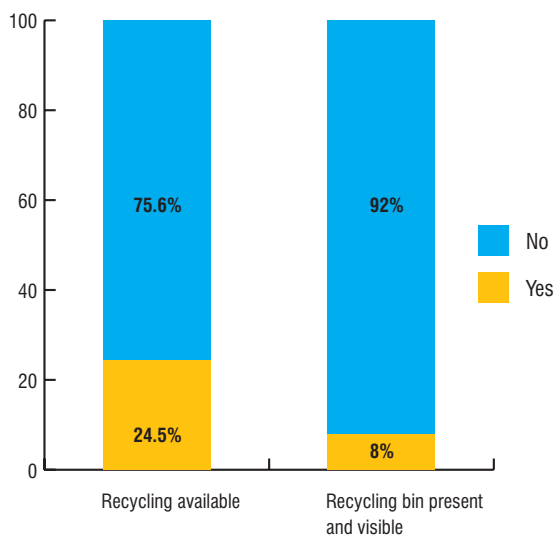


Figure 2. Percentage of retailers with recycling available and with visible recycling facilities

| | Non Mobile Muster retailers | Mobile Muster retailers | ANZ Mobile Muster | Total |
|--|-----------------------------|-------------------------|-------------------|-------|
| No recycling available | 108 | 1 | 4 | 113 |
| Recycling available but not visible | 10 | 19 | 2 | 31 |
| Recycling available AND visible | 2 | 8 | 4 | 14 |
| Total | 120 | 28 | 10 | 158 |

Table 1: Estimated total number of retail outlets where recycling is available⁹

II. Registered Mobile Muster retailers

Is recycling available? Is there a recycling bin in the store?

96% of Mobile Muster retailers could provide a recycling service upon request, however, only 69% had a recycling bin available; the others said they would recycle the phone, but there was no formal structure, nor indication that would give the customer confidence that the phone was actually going to be recycled.

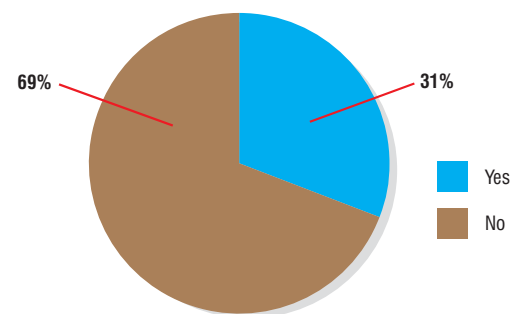


Figure 3. Percentage of Mobile Muster retailers with a recycling bin on site

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How visible is the recycling bin?

Of those that had a bin, 62% had a bin which was not visible to customers, as seen in Figure 4. Typical placements for the bin were either 'out the back', or 'hiding' behind the counter or in a corner of the shop. There were even cases where one employee was unaware of the presence of a recycling bin, but another staff member who overheard the conversation was aware of the recycling bin.

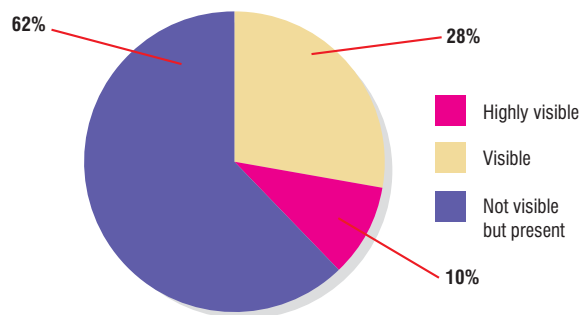


Figure 4. Visibility of the recycling bin

Are there clear instructions on the bin?

38% of bins had no instructions on them regarding what can and cannot be put into the bin.

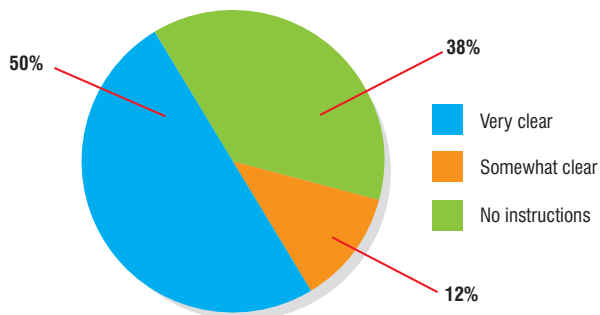


Figure 5. The percentage of bins with instructions on them

Is promotional and/or educational material available?

Promotional material was classified as posters, stickers, leaflets or any form of advertisement present in the shop that served to inform about the presence of the recycling service or educate people on the benefits and outcomes from recycling. As seen in Figures 6 and 7, the vast majority of stores had no educational or promotional materials at all.

This roughly corresponded with those stores that did not have a recycling bin that was present and visible.

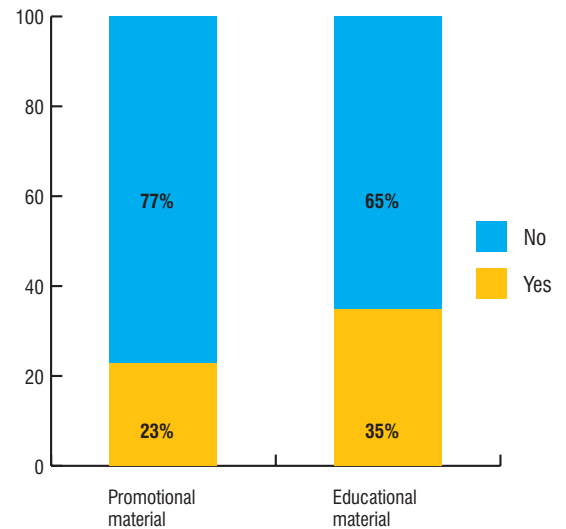


Figure 6. Availability of promotional and educational materials Mobile Muster shops

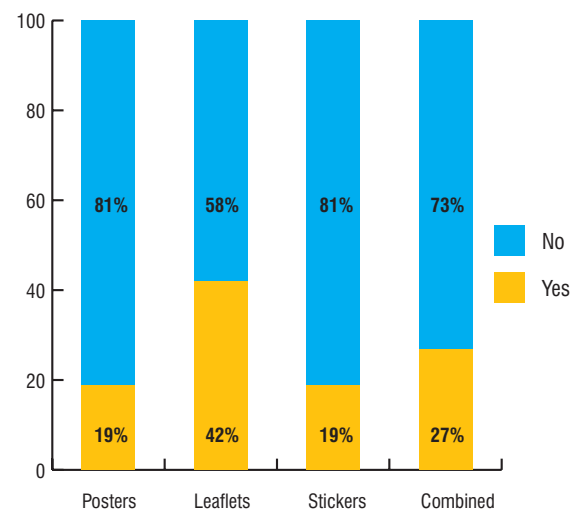


Figure 7. The types of promotional and educational materials found at Mobile Muster shops

III. Mobile phone retailers that are not Mobile Muster registered

The City of Sydney LGA is estimated to have about 120 mobile phone retailers that are not Mobile Muster registered¹⁰.

Of the 120 retailers, a random sample of 38 retailers was chosen to be surveyed. This sample is equivalent to nearly a third of all retailers, a statistically robust sample size.

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Of the 38 retailers surveyed, 92% had no recycling available, only 8% (or 3) retailers had some form of recycling available to customers (different to that offered by Mobile Muster). Of the three retailers, only one had a recycling bin that was present and visible in the store. This bin belonged to a charity organisation that collects the phones for recycling as a source of income. The other two stated they would take an old phone and send it for recycling. There was no way for the surveyor to verify this claim.

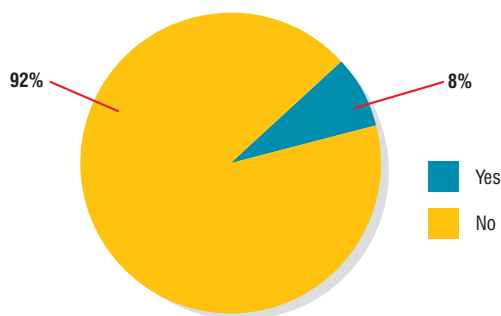


Figure 8. Percentage of non-registered retailers that offer a recycling service

There was no promotional or educational material in any of the stores surveyed, except the above mentioned charity collection box, which had leaflets and a sign beside it.

The responses from staff at these retail outlets was divided between those having no knowledge of recycling as an option, and those who knew recycling was possible but did not offer it, and lastly those who sent the surveyor to a Mobile Muster registered shop. Of the first group, responses included: "I don't think you can recycle, just find a bin and chuck it out".

IV. ANZ banks that are Mobile Muster registered

There are ten ANZ branches that are registered as Mobile Muster outlets. All of those were visited and the results show that only just over half (6/10) actually offer a recycling service, and even less (4/10) have a recycling bin available and visible to customers, as seen in Figure 9 below. Where a bin was available, 70% had an educational pamphlet beside the bin and half had an A4 sized promotional poster, as seen in Figure 10.

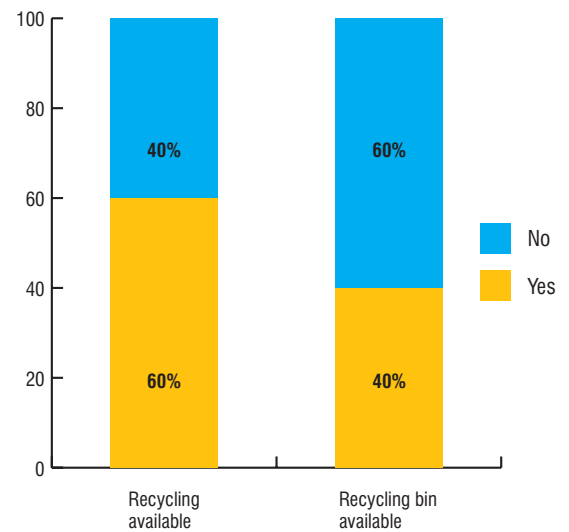


Figure 9. Percentage of Mobile Muster ANZ branches that offer recycling

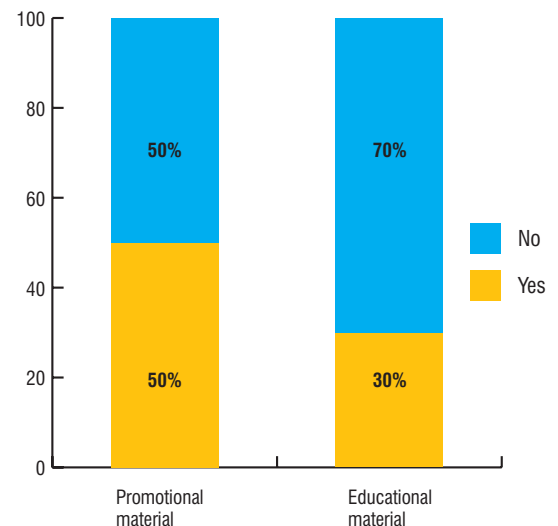


Figure 10. Percentage of non-registered retailers that offer a recycling service

03

The survey results reveal many shortcomings in the industry's voluntary recycling scheme, Mobile Muster.

- The scheme's coverage is extremely poor, fewer than 20% of mobile phone retailers participate in the scheme.
- The performance of those retailers participating in the scheme is inconsistent, and lacking in many aspects; such as:
 - The recycling bin is placed in a visible position in only 38% of stores
 - Promotional and/or educational material is found in only 29% of stores
- only 8% of retailers (or 10 shops) have a recycling bin that is present and visible in the shop area; and two of those are not with the Mobile Muster scheme. The scheme clearly cannot cater for a population of half a million, who replace between 300,000-350,000 mobile phones every year.

The poor representation of Mobile Muster among mobile phone retailers, and the below average performance of those in the scheme perhaps provides some explanation to the scheme's self reported low recovery rate of 3%.

The questions of where the funds raised through the recycling levy have gone, and the cost-effectiveness of the Mobile Muster promotional campaign remain unanswered, and points to the lack of transparency and accountability of the scheme. If the levy funds are being used for education and promotion that is producing such poor results after seven years, there is a strong argument that government regulation is overdue.

The emerging market for the sale of refurbished phones is also an issue here. Currently, independent companies, such as Aussie Recyclers,

are offering to donate \$3-\$5 to charity for old phones that are returned to them. The funds recovered from the refurbishment and resale of these phones is clearly sufficient to fund material recovery or safe disposal of phones, as well as a donation to charity and funding for the running costs of the operation. Clearly, there is substantial value in used phones that is not being captured by Mobile Muster.

The Scheme needs to be much more transparent and satisfy the following issues:

- Account fully for the total amount of levies collected and their disbursement
- Report the funds being received for recycling, refurbishment and reuse and their disbursement

We question the motives behind the Mobile Muster program that continues to run a failing scheme for which consumers are paying. In this situation, we find that state and federal Government action is required.

Government regulation could provide consumers with the right incentives to return their phones and with the confidence that their waste is being dealt with appropriately, while setting targets for industry and ensuring they are met. Only regulation will guarantee industry collects more than a meagre 3% of unused phones, and provide transparency and verification mechanisms to ensure appropriate environmental and economic outcomes.

This approach has been taken in Europe with the 'Waste Electrical and Electronic Equipment Directive' (WEEE Directive) which became European Law in 2003, setting collection, recycling and recovery targets for all types of electrical goods. The Directive imposes on producers the responsibility for financing the collection, treatment, and recovery of electronic and electrical waste

03 DISCUSSION

equipment, and obliging distributors to allow consumers to return their waste equipment free of charge. Companies are required to take back and recycle 65% of product waste. The Directive has not only been successful in significantly increasing the recovery rates of electronic waste, but has also had immense positive flow-on effects. In Ireland for example, there was a five fold increase in WEEE recycling and within one year 200 new direct jobs were created and three new WEEE recycling facilities were built¹¹.

A refundable deposit could be implemented as part of a government regulated scheme. Refundable deposits are a proven way of ensuring the return of consumer goods for recycling, whilst also engaging sales staff and their customers in the take back scheme. The South Australian container deposit system is a good example of how this system works, delivering superior recycling outcomes compared to states without such a system. The scheme's levy funds could finance a buy back of phones currently being stored (on which no deposit was paid).

Motorola has increased its recovery rates in Europe following implementation of the WEEE by 50% within two years. Mechanisms used to encourage phone return include enclosing prepaid return envelope in packaging boxes and providing take-back services at service centres.

04

The continued failure by the mobile phone industry to take recycling seriously and achieve significant recovery rates, despite imposing a levy on each handset sold, is a clear sign that voluntary measures are insufficient.

Seven years of a failed voluntary scheme are enough. There is an urgent need for:

- State and Federal Governments to implement a fully regulated Extended Producer Responsibility (EPR) scheme with clear and mandatory targets with interim milestones.

A refundable deposit should be implemented as part of the EPR scheme.

- An initial 'buy back' incentive for phones already sold should be implemented to recover the stockpile of phones already in circulation.
- The ultimate goal of the recycling scheme should be 90% of phones sold by 2015, with an interim target of 50% by 2010.

The states should place a ban on mobile phones going to landfill from 2015.

The refundable deposit should be \$10. This would provide the necessary incentive for consumers to become involved and provide continuing funds for recycling.

05

1 Based on industry figures, in 2006/7 that show 8 million new phones were sold, 5.3 million old phones were replaced and 160,000 handsets were recycled (3%). 42c was collected as a deposit on each phone sold, amounting to a total levy of \$2.2 million for the phones replaced that year.

2 New South Wales Extended Producer Responsibility Priority Statement 2005-2006. Department of Environment and Conservation NSW.

3 Frey, S.D. Harrison, D.J. and Billett, E.H. (2006) Ecological Footprint Analysis Applied to Mobile Phones

Journal of Industrial Ecology, Vol. 10, No. 1-2, Pages 199-21

4 Ibid

5 NSW EPR Priority Statement. above

6 City of Sydney Council, City Facts and Figures. Accessed: 17/05/07

<http://www.sydneymedia.com.au/html/2280-city-of-sydney-a-snapshot.asp>

7 Australian Bureau of Statistics (ABS), 1301.0 - Year Book Australia, 2005.

8 New South Wales Extended Producer Responsibility Priority Statement 2005-2006. Department of Environment and conservation NSW

9 Survey data has been multiplied to provide a complete picture of all retailers.

10 This figure was established through a variety of search methods, including visual, Yellow Pages, a range of internet search engines and telephone inquiries. The rapid rate of change in the industry makes this figure subject to variation.

11 Department of the Environment, Heritage and Local Government (Ireland) , 2006.

<http://www.wееeireland.ie/downloads/WEEE%20Recycling%20A%20Remarkable%20Success%20Story.pdf>



Total Environment Centre Inc

www.tec.org.au

July 2007

**Level 4, 78 Liverpool Street,
Sydney, NSW 2000**

**Mailing: PO BOX A176,
Sydney South 1235**

Ph: 02 9261 3437 Fax: 02 9261 3990