



# SYSTEM FAILURE

The UK's harmful trade in electronic waste



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# ILLEGAL TRADE IN ELECTRONIC WASTE



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## THE GROWING PROBLEM OF ELECTRONIC WASTE

Electronic waste, or e-waste, is the common term for electronic goods at the end of their 'useful life'. Computers, mobile phones and televisions are all types of electronic goods classified as hazardous waste under the Basel Convention, an international treaty regulating cross-border trade in harmful waste.

Due to the proliferation of electronic devices and accelerated technology advances, an increasing amount of e-waste is created every year. It is the fastest-growing waste stream in the UK, with more than one million tonnes generated annually.<sup>1</sup> Globally, the United Nations Environment Programme (UNEP) estimates annual production of e-waste to be 50 million tonnes, of which only 10 per cent is recycled.<sup>2</sup>

E-waste can be highly hazardous to both the environment and human health due to the substances it contains. A computer processor has an array of dangerous metals and chemicals such as antimony trioxide, polybrominated flame retardants, selenium, cadmium and mercury. Cathode ray tubes (CRT) found in older-style bulky TVs and

desktop computers often contains large amounts of lead. As well as potentially harmful materials, e-waste may also contain small amounts of valuable metals such as gold and copper.

A range of regulations at the international, regional and national levels govern trade in e-waste. The intent is to promote safe recycling of broken electronic equipment and to enable legitimate trade in used, working equipment. In reality, huge quantities of discarded e-waste end up being illegally traded around the world.

The European Union, despite strong legislation, is a major source of e-waste which is illegally exported and dumped in developing countries. An estimated 75 per cent of e-waste generated in the EU, equivalent to eight million tonnes a year, is unaccounted for.<sup>3</sup>

The destination countries do not have the infrastructure to recycle e-waste safely. Instead, it is processed manually in scrap yards with no consideration for health and safety. The e-waste is stripped down to components by hand. Copper wires are bundled and set alight to remove flame-resistant coatings, emitting toxic dioxins; CRT monitors are smashed with hammers, releasing plumes of lead and

**ABOVE:**  
Children working at an e-waste dump in Ghana.



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## HEALTH AND ENVIRONMENTAL IMPACTS OF E-WASTE DUMPING

The crude methods used to process e-waste in developing countries have dire consequences for those involved and the surrounding environment.

Research at two scrap yards in Ghana where e-waste is burnt and broken down found lead and other metals in quantities 100 times greater than in normal soil samples.<sup>7</sup> In Guiyu, a major e-waste processing town in south-eastern China, the state media estimated almost nine of out 10 residents suffered from problems with their skin, nervous, respiratory or digestive systems.<sup>8</sup>

### Harmful chemicals found in e-waste include:

- **Arsenic**, used in integrated circuit boards and can be a serious threat to health;
- **Beryllium**, used in computer motherboards. Its dust is toxic to humans, causing respiratory problems;
- **Cadmium**, formerly used in cathode ray tubes. Its oxides are highly toxic to plants, fish and humans;
- **Lead**, used in printed circuit boards, and lead oxide is used in cathode ray tubes. It is toxic to humans and can affect the development of the brain and central nervous system in children;
- **Mercury**, used in flat-screen displays. It can leach into water supplies and become methylmercury, a toxic substance that accumulates in the food chain;
- **Phthalates**, also known as plasticisers. Affects reproductive health;
- **Selenium**, used in printed circuit boards. Exposure to high amounts can lead to neurological problems.<sup>9</sup>

cadmium dust. After the useful metals are taken out, leftover parts are often dumped in landfills or rivers, or simply burnt.<sup>4</sup>

Poverty in countries where e-waste is illegally dumped often leads to young children being involved in breaking down the electronic goods. The potential health consequences for those involved in this kind of work are dire – reproductive and developmental problems, damaged immune, nervous and blood systems, kidney damage and impaired brain development in children.

Much of Europe's e-waste ends up in West Africa, especially Nigeria and Ghana. As developing nations' economies grow so does demand for electronic goods, especially good quality secondhand equipment; yet consignments of such equipment arriving in West African ports are mostly e-waste, with about 75 per cent of the electronic units arriving found to be broken.<sup>5</sup>

Importers seem willing to bring in containers mostly filled with e-waste because the demand for electronics is so high that buyers are prepared to purchase untested items. The scale of this trade is enormous; in Nigeria's capital, Lagos, half a million computers arrive every month.<sup>6</sup> Much of this export from Europe is carried out by West African nationals, often termed 'waste tourists', with family or business contacts in countries such as the UK.

Exported e-waste from the EU comes from two main sources; the Business to Business (B2B) chain and the Business to Consumer (B2C) chain. B2B waste occurs when companies and organisations get rid of old IT equipment. Many computer recycling companies offer to collect and recycle obsolete IT equipment from businesses. A lot of them offer a range of services, including data-wiping, and operate according to the law, but others sell on the e-waste they collect rather than recycle it themselves. EIA's investigations reveal that smugglers may purchase e-waste from less scrupulous computer recycling companies, resulting in used IT equipment being diverted onto the black market instead of being treated in compliance with the law.

A survey of old computers being broken down at dump sites in Nigeria revealed that many still bore asset tags indicating they had been sourced from a business to business chain. These tags are used by companies and government agencies to deter theft. The survey found company and government tags from a range of countries, including the UK, USA, Germany, Belgium, the Netherlands, Finland, Norway and Italy.<sup>10</sup>

The other source of e-waste comes directly from consumers. When an item of electronic equipment reaches the end of its useful life, consumers are asked to take it either to their local council recycling site or to another designated collection facility such as the retailer from whom they are purchasing a replacement product. The waste is then recycled, the process financed by electronic equipment producers as part of their commitments under the EU's Waste Electrical and Electronic Equipment (WEEE) directive.

Under the current system only about one-third of Europe's e-waste is treated, with the remainder most probably ending up in landfills and sub-standard sites or illegally exported.<sup>11</sup> This illegal trade is driven by financial profit. E-waste contains certain valuable components, desirable to recover; it is easy to source, relatively cheap to ship, and the risk of being caught is low. Work by the United States Environmental Protection Agency in 1998 estimated it was 10 times cheaper to ship CRT monitors to China than to recycle them in the USA.<sup>12</sup>

## ENFORCEMENT EFFORTS

The issue of e-waste dumping in developing countries is not new. Back in 2002, the Basel Action Network documented widescale dumping of e-waste by developed countries in China and other parts of Asia.<sup>13</sup> In recent years, the media and environmental groups have regularly exposed smuggling and dumping of e-waste. Its tragic consequences for the local environment and health of those involved in processing are well known, yet the flow of e-waste continues.

During the past few years, repeated exposés of hazardous waste dumping, including e-waste, have prompted a spate of cross-border enforcement efforts to curb the problem. Examples include:

- European Union Network for the Implementation and Enforcement of Environmental Law on transfrontier shipments of waste (IMPEL-TFS). The project promotes compliance and joint enforcement projects across Europe. During 2007, a pan-European joint inspection initiative found 15 per cent of shipments in violation of the law;<sup>14</sup>
- Operation Sky-Hole Patching. Between March and October 2007, Customs authorities across the Asia-Pacific region seized more than 3,000 tonnes of hazardous waste. Hong Kong Customs alone seized 98 consignments from 25 countries, including 47 tonnes of used computer monitors from Italy, 170 tonnes of monitors from Belgium and 34 tonnes of monitors from Germany;<sup>15</sup>

- Operation Demeter. World Customs Organisation-led project involving 11 countries for 50 days in 2009 resulted in 56 seizures of hazardous waste weighing more than 30,000 tonnes. Most of the seizures occurred in Europe prior to export, and Africa was found to be the most common destination for e-waste;<sup>16</sup>
- INTERPOL Global E-waste Crime Group, set up in 2009 to develop a multinational enforcement strategy to control the illegal trade in e-waste and investigate links to organised crime.<sup>17</sup>

## THE UK'S ROLE IN E-WASTE TRAFFICKING

Evidence shows the UK has a persistent problem with e-waste trafficking. The country produces one million tonnes of e-waste a year, comprising more than six million electrical and electronic items. Severe leakage of this e-waste onto the black market occurs; industry sources estimate up to half of all computers discarded in the UK enter illegal trade streams.<sup>18</sup> When new EU rules came into force in the UK in 2007, many companies entered the market as recyclers, expecting up to 1.5 million tonnes of electrical and electronic waste needing to be recycled every year.<sup>19</sup> By 2009, the volume of e-waste recorded was only one-third of what was projected, with the bulk of the remainder siphoned off onto the black market.<sup>20</sup>

### BELOW:

Illegal e-waste shipment seized by Hong Kong Customs.



© Hong Kong Customs and Excise

Research by the media and NGOs has repeatedly documented illegal e-waste exports from the UK to a range of destinations, especially Nigeria, Ghana and Pakistan. In many cases, investigations at dump sites have revealed illegal e-waste carrying asset tags from UK companies and Government agencies, including the Ministry of Defence and National Health Service.<sup>21</sup>

During the past three years the Environment Agency (EA), the body charged with regulating trade and handling of hazardous waste in England and Wales, has adopted a more proactive approach to combating e-waste smuggling, developing intelligence-led enforcement involving collaboration with other bodies such as the police and Customs, as well as shipping lines. It has also increased international cooperation and now shares intelligence with more than 40 countries.<sup>22</sup>

In December 2010, the EA revealed it was prosecuting 11 people for involvement in illegal e-waste exports to West Africa.<sup>23</sup> Yet funding for its specialist e-waste intelligence unit ended in March 2011 and it is uncertain whether progress in curbing e-waste smuggling from the UK will be maintained.

Enforcement efforts have shown local council recycling sites are often the source of illicit e-waste. In June 2010, Plymouth City Council was fined almost £12,000 for selling TV monitors and other potentially harmful e-waste to unauthorised recyclers.<sup>24</sup> In July 2010, a Merseyside-based company was prosecuted for the illegal export to Hong Kong of e-waste originally collected from civic amenity sites in Cumbria.<sup>25</sup> In 2009, e-waste deposited at a Hampshire County Council civic amenity site in Basingstoke ended up smuggled to Lagos, in Nigeria.<sup>26</sup>

Cases in the UK reveal that some of the criminal groups trafficking e-waste are also involved in crimes such as theft, human trafficking, fraud, drugs, firearms and money laundering. A raid on a waste storage facility in the Midlands found significant amounts of e-waste destined for West Africa, along with stolen vehicles worth £500,000, narcotics and firearms.<sup>27</sup>

Based on these documented cases, EIA decided to launch an investigation into how e-waste delivered to civic amenity sites or collected from businesses in the UK ends up smuggled to dump sites in developing countries.

## UK REGULATIONS ON E-WASTE

Trade and treatment of e-waste in the UK is regulated under the EU WEEE Directive, a key goal of which is to promote recycling and so reduce the amount of e-waste going to landfill. An important aspect is the Producer Responsibility Principle, making producers responsible for financing the collection, treatment and recovery of waste electrical equipment. The directive entered into force in the UK in 2007.<sup>28</sup>

The EU's Waste Shipments Regulation also controls the trade in hazardous waste entering and leaving Europe. Under this regulation, shipments of certain types of hazardous waste, including e-waste, from the EU to countries not members of the Organisation for Economic Cooperation and Development (OECD), is prohibited.

The UK is also a party to The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, which came into force in 1992. It has 175 Parties and aims to protect human health and the environment against adverse effects resulting from the disposal of waste. Under the convention, it is illegal to trade hazardous waste across national borders if the importing country does not consent to receive the waste.

The key issue is understanding what is classified as waste and what can be legally exported as secondhand goods. Many environment agencies throughout Europe use what is commonly referred to as correspondents' guidelines.<sup>29</sup> The guidelines lay out a set of criteria for determining whether a piece of equipment is WEEE or just electrical and electronic equipment (EEE).

### An electrical item is considered waste if:

- the product is not complete, essential parts are missing;
- it shows physical damage impairing its functionality or safety;
- the packaging for protecting it from damage during transport, loading and unloading operations is insufficient;
- the appearance is generally worn.

### In order to prove an electrical item is not waste, exporters of EEE are requested to adhere to these guidelines, which include the following criteria:

- all items must be functionality tested;
- each item should be sufficiently packaged to protect it from damage during transportation and loading;
- a record should be attached to each item containing an identification number, the name and address of the company responsible for functionality testing, and details of functionality tests performed.



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## EIA'S INVESTIGATIONS INTO E-WASTE SMUGGLING

EIA set out to document how discarded electronic waste is diverted to the black market and smuggled overseas. From mid-2009 to early 2011, EIA undercover investigators held a series of meetings with recycling companies and waste brokers, and scrutinised e-waste handling at several civic amenity disposal sites. The investigations were confined to South-East England, but provide insights into the UK-wide problem of lax control of e-waste.

### FROM CROYDON TO GHANA - SPOTLIGHT ON CIVIC AMENITY SITES

In spring 2010, EIA investigators posing as students carrying out recycling projects visited six civic amenity sites chosen at random throughout the Greater London area.

EIA visited a civic amenity site in Merton, south-west London, where investigators were told by staff the waste management is overseen by a company called Environmental Waste Controls Ltd (EWC). Further discussions with a site worker revealed that TVs and other electrical goods such as video players were being taken away separately by an outside company, named as Sanak Ventures Ltd, packed into containers and shipped to Nigeria. At least seven tonnes of TVs were being sold to the company each week, at a cost of about £1.50 to £2 per set.

The employee went on to explain that this was standard procedure at all 49 civic amenity sites run by EWC in the UK. As well as running local authority waste sites, EWC also provide waste and recycling services to a number of large companies and Government agencies, including the supermarkets Asda, Tesco and Morrisons, Network Rail, Barclays, Hilton Hotels and the NHS,<sup>30</sup> although it is not known whether this includes the handling of unwanted IT and electrical goods.

EIA also visited a Croydon Council civic amenity site, in Greater London, also run by EWC. At the site, investigators witnessed two TVs being dropped off by members of the public and were told by a site worker they would be stored in a separate area of the site and collected by another company for export to Nigeria or Ghana. The site worker explained there was a lot of demand for used electronics from these regions, with TVs being sold in Nigeria for up to £70.

### E-WASTE TRACKING

At the sites in Merton and Croydon, EIA discovered that e-waste disposed of by the public was being routinely sold on to an outside company and exported to West Africa. As long as the equipment, such as TVs, had been tested after arriving at the site and found to be working, its export would be legal. To find out if such checks were being made, EIA dropped off TVs at both sites. But these

#### ABOVE:

An EIA investigator fits a tracking device into a disabled CRT monitor.



**ABOVE:**  
Tracker signal on arrival in Tema Port, Ghana.

were not normal TVs; inside were sophisticated tracking devices, allowing the movement of the sets to be remotely monitored using GSM networks or GPS signals. In addition, the internal workings of the TVs had been deliberately disabled in a way that would only be revealed if a proper test was conducted. The two sets were dropped off in September 2010.

After a few days, both were moved to a location in west London. GSM location technology within the tracker suggested the location may have been Sanak Venture's headquarters.

After two days at this location the signal from the first TV, which had been left at Merton, was lost; the second, from Croydon, continued transmitting at the location for a further two weeks. This set next transmitted a position several miles to the north-east of its previous location, suggesting it was on the move. The signal was then lost.

One month after the signal from the first TV was lost, it suddenly re-established transmission – from Lagos, Nigeria. The tracking technology was able to indicate a location near the Olojo Road, close to Lagos's Alaba Market, a notorious centre for the sale of e-waste.

Similarly, one month after communication with the second TV was lost, a signal was received from the tracker giving the location as Tema Port, Ghana. EIA immediately alerted Ghana's port authority, but the shipment moved on before it could be intercepted. After leaving the port, the tracking device showed that the TV moved to Temale, a town in northern Ghana. One month after arriving in Temale, the tracker's tamper device was triggered, suggesting it may have been dismantled.

A follow-up investigation by BBC investigative programme Panorama managed to locate the tracking device in Temale, interviewing the person who

had bought the TV. He said when he realised it was broken he removed some component parts before dumping the set.

To seek more detailed information on the exact route taken by e-waste diverted from the Croydon site, EIA left another broken TV containing a tracker at the site in December 2010. This time the tracker clearly showed the set moving to the north-west of England, and revealed it was delivered to premises owned by a recycling company. The tracker then indicated the TV was moving south again, ending up at the port of Felixstowe, in Suffolk. Suspecting an illegal export of e-waste was about to take place, EIA alerted the authorities and the container holding the TV was detained for inspection. Its contents were revealed to be mostly non-working CRT TV monitors, stacked haphazardly and concealed behind a few layers of properly packaged working units. The intended destination was Nigeria.

## LACK OF CARE

The fact that all three broken TVs deposited by EIA at the Croydon and Merton waste sites were bound for West Africa indicates serious failures on the part of the local authorities, the Producer Compliance Scheme and site management company EWC to properly dispose of e-waste delivered into their hands. When disposing of used electrical goods at civic amenity sites, the public has a right to expect that the equipment will be disposed of in accordance with the law. The broken TVs inserted into the waste stream should have been sent for recycling, not shipped to West Africa. Industry intelligence suggests the diversion of e-waste from local authority sites to the black market is widespread. EIA's investigation using trackers confirms this.

## BROKERS AND MIDDLEMEN

The tracker investigation indicates that e-waste passes through a number of hands from collection or drop-off point to the final destination. EIA investigators set out to uncover how the brokers and middlemen in the UK's e-waste business operate. To gather this information, EIA set up a front company based in Hong Kong looking to source supplies of cheap CRTs for shipment to mainland China at the lowest possible price – meaning non-working.

A list of target companies was compiled using information from internet trading platforms, on which many companies were openly offering untested CRTs for export to developing countries. Following initial contact via email or telephone, EIA undercover investigators arranged to meet face-to-face with several suppliers in south-east England.



The investigation revealed that while some companies were involved in directly exporting CRTs, others simply sold them on to exporters. Most seemed to be engaged in both legitimate and black market activities as many offered to sell both tested and untested CRTs for export. During the course of the investigation, EIA discovered how traders frequently circumvent Customs checks by mislabelling waste CRTs as working, using generic terms such as “used personal effects” or “used household goods” on shipping documents. Investigators were repeatedly told that in the UK, demand for used CRTs by brokers far outstrips supply. Destination countries mentioned for used CRTs were Vietnam, Pakistan, Nigeria, Ghana, Morocco and Egypt. EIA’s front company was offered untested CRTs from brokers who claimed to source their equipment from various Government institutions, including the Ministry of Defence, the Fire Service and National Health Service surgeries.

From these investigations, it is clear that discarded electronic equipment passes through a number of hands from collection to final destination. A meeting between EIA undercover investigators and the company PC Disposals (PCD) revealed the mechanics of the legitimate trade.

PCD provides a service to businesses and Government agencies to collect and dispose of unwanted IT equipment. Companies book disposals by phone or via the company website, and pay for the

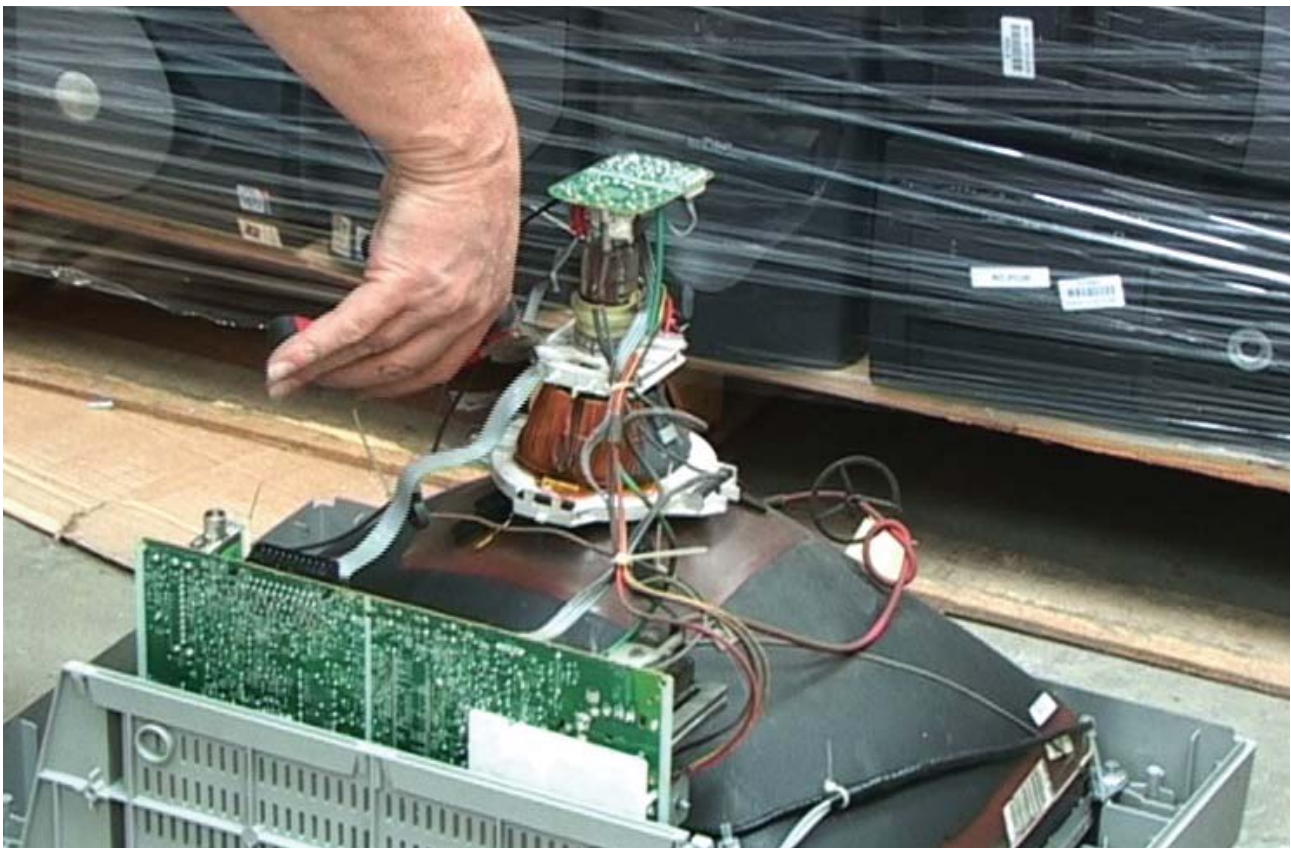
material to be collected and taken away. The company claims to have disposed of equipment from more than 1,800 businesses across Europe.<sup>31</sup> PCD has an Environment Agency waste carriers licence and the company specifically warns customers of the dangers of using unscrupulous traders.<sup>32</sup> The company’s managing director, Tim Hayden, has called publicly on the Government to “clamp down on cowboy traders exporting waste to Africa”.<sup>33</sup> Hayden also states that “Profiting out of e-waste to the detriment of the environment goes against everything that PCD stands for”.<sup>34</sup>

At a meeting with Hayden in December 2009, it became clear that demand for used CRTs far outstrips supply. He said the company had been handling as many as 2,000 CRT computer monitors every month, although numbers had since dropped and PCD was handling about 500 CRT monitors a month. At the time of EIA’s visit, he said was currently bidding to secure a supply of 10,000 CRTs from the Ministry of Defence.

Hayden claimed to have customers for CRTs in a number of countries in Africa. He said: “Anyone who phones up here saying they want to buy CRTs, I just tell them to send an email. I get three or four enquiries a day to buy the stuff. It’s the easiest job in the world.”

He explained that PCD does not normally switch on or otherwise test the CRTs to see if they are working, due to the expense, and only those machines which

**BELOW:**  
A CRT monitor is deliberately disabled before a tracking device is installed.



have cosmetic defects such as broken or missing stands or screen burn are sent for recycling. When asked about testing, he said: "No, it's just counting them, check the screen. We don't switch them on." Although the cosmetically defective machines are normally sent for recycling, Hayden offered to sell them to EIA's cover company for export to China at a reduced price of £2 per unit, instead of the usual £2.50.

Hayden made it clear during the meeting that PCD does not export untested CRTs, but sells them on to buyers who arrange the shipment. Speaking about some of his clients, Hayden said: "For example, Pakistan, they have family in the UK and they come in and organise it because it is their brother's or cousin's outfit in Pakistan. With Africa, they fly into the UK to organise the shipping and then they go back as soon as the containers are gone."

Based on EIA investigators' meeting with PCD, it appears that PCD complies with relevant UK legislation because it is not involved in the export of untested CRTs. Yet the meeting with Hayden reveals how untested electronic equipment from businesses and Government departments is legitimately sold on to third-party buyers, who may then divert the e-waste overseas.

In late 2010, EIA deployed three trackers in broken CRTs and arranged

for the equipment to be collected from a business address by PCD. Analysis of the journey made by the CRTs shows they all ended up with legitimate recyclers.

Hayden's willingness to sell untested CRTs to EIA's front company on the understanding that they would be exported to China reveals how current legislation is failing to operate properly. There is a need to legally clarify the Duty of Care a company must obey when selling on untested IT equipment.

Other companies which EIA met during the investigation included:

### Remarketing International

This Moldovan-run company trades a plethora of used electronic goods. EIA met with representative 'Igor' in December 2009 at the company's warehouse in East London after seeing adverts by Remarketing for used computer equipment. Igor explained the company obtains most of its supplies of used computers, including CRT monitors, from recycling companies. The majority of these are sold on for export to Africa. Igor said the export process is normally handled by the African buyers themselves and that while some buyers required the monitors to be tested, others were happy to buy untested, provided the screens were intact.

At the time of the visit, Remarketing had only a few used CRTs in stock. When EIA investigators asked about larger quantities, Igor called his boss, Radu Roman, in Moldova. After the conversation, Igor offered to source and ship 1,000 untested CRTs a month to China, at £3 per unit. Igor said the CRTs would be coming from the company's main supplier, which he said was a very large UK recycling company sourcing CRTs from the UK and abroad. Igor said the recycling company was not allowed to sell the untested CRTs directly to China, but that with Remarketing as a middleman such restrictions could be circumvented. When asked about export arrangements, Igor was confident the firm would be able to handle export paperwork as it had significant experience in shipping to Moldova, Romania and Ukraine. He added that full payment for the CRTs would be required in advance.

### Micro Traders & Disposals

EIA visited Micro Traders & Disposals, based in East London, in summer 2009 and met with Director Muhammed Irfan Sheikh and his colleague, Shan. The company had been offering tested and untested CRTs for sale online. They initially claimed the company only exports tested, working CRTs, but eventually admitted that about half of the 15 containers of CRTs it ships every month were untested, although they

#### BELOW:

Igor at Remarketing International.

#### BOTTOM:

Waste IT sorted by category at a civic amenity site in Wandsworth, London.



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stressed these machines were coming from “a working environment”.

They were happy to sell EIA’s cover company untested monitors for export to China. Irfan said the company’s main overseas markets were Pakistan, India and the Middle East. He drew attention to the dwindling supply of CRTs in the UK but said there was a large stock available in other European countries, which Micro Traders was able to ship to the UK for onward sale outside of the EU. Irfan noted that while the company normally ships CRTs packed on pallets, some buyers requested the monitors be packed loose into a shipping container in order to fit in more units. He offered to do this for EIA’s cover company but warned it could be expected that about 15 per cent of CRTs shipped this way would be broken in transit.

### The British Connection

The firm British Connection is based in North London and claims to have “a vast client portfolio [which] includes many large multinational companies, blue chip corporations, as well as local and central government bodies”.<sup>35</sup> The company claims on its website to be fully WEEE-compliant and states that all non-working equipment is “disposed of in an environmentally friendly manner”.<sup>36</sup> British Connection’s website includes testimonials from an unnamed large British university and a Home Counties borough council.

EIA visited the British Connection premises in East London in July 2009

after seeing online adverts by the company for CRTs. Investigators met with sales agent ‘Altan’, who claimed the company tests every CRT it receives, but stated it had exported non-working ‘scrap’ CRTs in the past, to destinations including Vietnam and China.

Altan said the company makes a shipment of scrap CRTs approximately every six months. Investigators were shown 300 scrap CRTs in the company’s warehouse, which Altan said had been collected during the previous six months and which were clearly labelled ‘scrap’. He offered to sell the scrap CRTs for shipment to China, stating he did not believe there would be any problem with the shipment clearing UK Customs. Altan explained that while British Connection usually packs the goods into the shipping container, and in some instances handles the exportation, in most cases the buyers handle the shipping. He stated that for the scrap CRTs shipped to Vietnam, British Connection handled the exportation, while for the shipments to China the buyer brought and loaded its own shipping containers.

When questioned in a follow-up phone call about the potential legal issues with exporting scrap CRTs, Altan changed his story and claimed the CRTs he had shown EIA investigators were actually tested and working but had purely cosmetic damage such as broken cases, despite being clearly labelled as scrap.

### ABOVE:

Environment Agency staff remove illegal e-waste from the container detained at Felixstowe following a tip-off from EIA.



## FIXING THE SYSTEM

### ABOVE:

Illegal shipment of thin film transistor (TFT) screens seized en route from the EU to Hong Kong - the TFTs has been hidden behind bales of plastic scrap.

### DUTY OF CARE FAILURE

EIA investigations reveal widespread illegal trade in waste CRT monitors leaving the UK. Some companies posing as recyclers also sell on e-waste with no regard for the final destination. Undercover work has revealed how many traders knowingly sell on e-waste for illegal export to developing countries, breaking the duty of care to deal responsibly with e-waste collected from businesses and the public.

This failure of care extends throughout the supply chain, from brokers carrying out the export right up the ladder to Producer Compliance Schemes, local authorities and the operators they contract to oversee civic amenity sites. By failing to audit and verify the final destination of e-waste, many companies are facilitating this harmful and illegal trade.

Information obtained from Croydon and Merton councils confirmed that civic amenity sites in both boroughs are managed by Environmental Waste Controls Ltd (EWC) and that the logistics company DHL acts as the Producer Compliance Scheme overseeing e-waste left at the sites. EWC advertises itself as a "Multiple award-winning waste and recycling management company" with numerous large clients from both the corporate and local authority sectors. DHL is a multinational logistics group. As part of its services, it runs one of the UK's largest producer compliance schemes with more than 450 customers.

Yet EIA's tracker investigation shows how three broken CRTs deposited at two of the councils' sites ended up in the hands of two outside companies, both EA-licensed and approved Operators, which subsequently diverted the e-waste

into export streams destined for West Africa. While the exporting companies are directly accountable, the case shows that EWC, DHL and Croydon and Merton councils failed to exercise a duty of care for e-waste under their control.

A comparable case occurred in June 2010 when the Environment Agency prosecuted Plymouth City Council for gross negligence for selling electrical items to recycling firms which sold them on to a third party being investigated for allegedly illegally exporting hazardous waste to Africa. The council failed to undertake its duty of care, adopting a 'no questions asked' approach for which it was fined almost £12,000.<sup>37</sup>

Until local councils and the companies they contract take responsibility for ensuring e-waste in their care does not leak onto the black market, the problem will remain.

### PRODUCER COMPLIANCE SCHEME

Under the WEEE directive, a proportion of consumer electronic waste must be recycled. In order to meet these objectives, manufacturers and retailers of electrical and electronic equipment (EEE) must join a producer compliance scheme and make payments to the scheme to cover the cost of recycling obsolete equipment.

These compliance schemes act as a link between those held responsible for initially producing the equipment and those charged with disposing of it responsibly through recycling.

Recycling e-waste in the UK is a complex business, often involving a chain of companies. For example, e-waste left at a council site is usually

collected under a compliance scheme. Instead of directly dealing with the e-waste, some compliance schemes sub-contract operators to collect and recycle different categories of e-waste, such as CRTs, fridges, fluorescent tubes, large and small household appliances and other electrical equipment. This waste is not usually quantified at the civic amenity site, only when it reaches an authorised treatment facility. This lack of stringent auditing leaves an opening for waste leaving council sites to be diverted to illegal markets.

The control system in the UK is further complicated by the sheer number of Producer Compliance Schemes. The UK has the most compliance schemes of any EU country; 36 compared to just four in France, three in Germany and two in the Netherlands.

The rationale behind the UK's extraordinarily large number of schemes was to create a market-based system which would drive down the costs of recycling for equipment manufacturers. Yet industry experts suggest this competitive system has instead driven down the price paid for recycling to such a low level that, in some instances, responsible recyclers are driven out of the market.

Andrew Morgan, Operations Director for Sims Recycling Solutions Europe, said: "Competition between Producer Compliance Schemes is proving unhealthy, with many of the schemes placing low cost ahead of the ability to demonstrate treatment to the appropriate standards and best available technology. In Sims' experience, only a select few of

the schemes have demonstrated any desire to effectively audit the supply chain and ensure that the interests of the producers and society are being met."

By sending Freedom of Information Act requests to a range of local councils in the UK, EIA learned that in one instance the fee paid under a compliance scheme was just £1.10 for recycling a CRT and £2.22 for a fridge. All the other councils surveyed were unaware of the rates paid by the compliance schemes they had contracted. EIA canvassed the opinions of reputable recycling companies and was told the actual cost of recycling a CRT is between £1 and £4, depending on volumes, with transportation adding a further £0.50-£1 to the total cost.

It appears that the existence of a multitude of compliance schemes in the UK has prompted a rush to the lowest price, undermining the legitimate recycling market and providing an additional incentive for illegal trade.

## TIGHTENING THE REGULATIONS

The WEEE Directive sets recycling and reuse targets. These are currently at a minimum of 4kg per person per year; however, this doesn't accurately reflect the amount of e-waste generated each year. In 2009, the UK collected 7kg per inhabitant but, despite being almost double the collection target, this equated to just 33 per cent of waste arising.<sup>38</sup> It is currently estimated only one-third of electrical and electronic waste in the European Union is reported as separately collected and appropriately treated, with the remainder either treated in a substandard manner or exported outside the EU.<sup>39</sup>

### BELOW:

TV sets for sale in a market in Lagos, Nigeria.





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**ABOVE:**  
E-waste dump in Ghana.

In order to improve the efficacy of the WEEE Directive, it is undergoing revision. In February 2011, the European Parliament agreed proposals to introduce new targets which will be progressively increased by 2016. Under the revised directive, Member States will have to collect 85 per cent of WEEE arising.<sup>40</sup> Industry experts have already warned that the targets might not be aggressive enough as the actual amount collected will be dependent upon how a Member State defines 'WEEE arising'.<sup>41</sup>

## THE NEED FOR ROBUST AUDITING

From the moment a member of the public leaves an item of e-waste at a civic amenity site until it is recycled, it should be monitored via an audit trail. The current system falls short of this, with many local councils failing to measure the amount of e-waste collected. Usually, the waste collected is not measured until it reaches an Approved Authorised Treatment Facility (AATF). Often the disposal site and the AATF are not geographically close to each other and fall under different local authority jurisdictions. These gaps in the audit trail facilitate the leakage of e-waste onto the black market.

## SECURITY IMPLICATIONS

Exporting waste computers to developing countries poses significant security concerns. End-of-life computers often contain sensitive personal information and bank account details which, if exported without being wiped, leave opportunity for fraud.

Companies investigated by EIA made claims to have contracts with various Governmental institutions, including the

Ministry of Defence, NHS surgeries and the Fire Service. If e-waste traders are unwilling to take the time to test a computer to see if it is working before selling it for export, it's also unlikely they would incur the expense of ensuring hard drives are correctly wiped before selling them on.

Stopping illegal exports of e-waste from developed countries is not just about reducing the environmental and human health impacts of our waste but has far-reaching and potentially very costly security implications. Current enforcement efforts against illegal e-waste exports simply do not reflect the real impacts of this crime.

## THE RIGHT WAY TO DO BUSINESS

Many illegal e-waste exports are carried out under the guise of 'secondhand goods', yet there exists a wholly legitimate business involving the supply of used but working electronic equipment to developing countries. Ensuring compliant exports of secondhand electronics is at the heart of efforts to prevent e-waste exports.

Computer Aid International is a UK-based charity which provides high-quality refurbished IT equipment to people in developing countries. It employs a system which enables it to verify and audit all secondhand equipment it processes. Each PC, laptop, monitor, printer, scanner and fax machine is bar-coded and recorded onto a database as soon as it arrives. Monitors and PCs are functionality-tested and those within Computer Aid's specifications are labelled as such and sent for packaging and shipping. Non-working items have reusable parts removed and are then sent for recycling, with none of the equipment or parts going to landfill.

# RECOMMENDATIONS

EIA investigations have revealed the widespread and significant scale of illegal e-waste exports from the UK. All of the trackers placed at council recycling sites ended up in developing countries or destined for illegal export. Investigations into business to business e-waste exports revealed that the flow of CRTs is diminishing; however, new types of e-waste exports are just around the corner, with traders now increasingly offering thin film transistor (TFT) and liquid crystal display (LCD) monitors for export. Those involved in illegal e-waste smuggling are adaptable to changing circumstances and it is likely they will move quickly to exploit new areas of opportunity. It is therefore essential to tackle the issue as a whole rather than just focus on how to stop waste CRT or waste TV exports.

## RECOMMENDATIONS:

- The UK Government should ensure continued funding for the Environment Agency to develop its intelligence-led enforcement approach
- The UK Government should conduct a full review of the

Producer Compliance Scheme system, with the goal of significantly reducing the number of such schemes and setting a realistic price for recycling

- The UK Government should commission a review of existing contracts between local authorities and Producer Compliance Schemes to ensure the schemes actually have the infrastructure to carry out recycling. The review should include scrutiny of sub-contracts between compliance schemes and service operators
- The right to award Producer Compliance Schemes contracts should be taken out of the hands of local authorities and centralised in the relevant Government ministry
- All unwanted electronic and electrical equipment left at Designated Collection Facilities, such as civic amenity sites, must be quantified before leaving the site, and audited records kept
- Producer Compliance Schemes holding the contract for sites from where e-waste has been

illegally exported should lose their contract once a successful prosecution of the exporter has taken place

- A company being investigated by the authorities for suspected illegal trade in e-waste should be barred from further export activities until the case is resolved
- The Environment Agency should tighten its procedures for the licensing of authorised treatment facilities and contractors, including increased unannounced spot-check visits
- Establishment of recycling facilities and Producer Responsibility in developing countries in order to meet growing domestic e-waste production
- Consumers or businesses seeking to dispose of unwanted electronic equipment should seek reassurances from local councils or recyclers that they have procedures in place to ensure it will not be illegally exported to developing countries

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