Export of e-Waste from Canada

A Story as Told by GPS Trackers

basel action network

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A Report from the e-Trash Transparency Project

Basel Action Network

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Executive Summary

In 2017 between the months of March and August, BAN delivered a total of 43 used electronic devices that contained GPS trackers, to electronics recyclers or recycler collection sites in the provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Nova Scotia, Ontario, and Quebec. We did this to better understand whether Canada and its electronics industry was complying with the waste trade obligations of the Basel Convention and the laws of Canada and of importing countries.

All of these electronic devices were rendered non-functional and economically unrepairable. The devices chosen were Cathode-Ray-Tube (CRT) type monitors, Liquid Crystal Display (LCD) type monitors (containing mercury lamps) and printers (containing lead-laden circuit boards). All of the equipment used qualified under the Basel Convention as hazardous waste and under Canada's Basel Convention implementation legislation. In each of these, we planted a GPS tracker capable of reporting to us every 24 hours as to its location.

Of the 43 trackers deployed at Canadian electronics recyclers and collection sites, seven (7) of the 43 (16%) were exported out of Canada. Of the exported tracked scrap equipment four of seven (57%) went to developing countries -- three to Hong Kong and one to Pakistan. The other exports went to developed countries, one to Germany and two to the United States.

While these amounts can, on the one hand, be seen as small, one must not forget what they represent. Canada generates 724 kt of e-waste per annum. Our sample size is small but if it is representative, extrapolation would indicate that as much as 116,000 tons of e-waste is exported by Canada per annum. And such volumes would likely represent illegal shipments.

We followed the Asian bound exported devices with field investigations. The three devices that moved to Hong Kong traveled to the New Territories region of Hong Kong-- an area now well documented as being a global e-waste trafficking and smuggling hub.[2] In New Territories, e-waste junkyards, hidden behind steel fences, are numerous. They are sites where undocumented laborers have been recently employed in the crude and harmful breakdown of the electronic equipment, often exposing themselves to dangerous toner dust, and, in the case of LCDs -- the extremely toxic metal mercury.

Likewise, a field investigation we conducted in Pakistan, follow a Canadian LCD to Peshawar. This investigation, revealed similar harmful breakdown operations of e-waste. These operations showed that hazardous toners, mercury and lead releases presenting likely harm to workers and the general population in the market area.

4 of the discovered exports (to developing countries) were deemed likely to be illegal and 3 (to developed countries) possibly illegal. These assertions arise from the fact that each of these pieces of equipment are considered to be hazardous waste under the Basel Convention and four of the five countries concerned, Canada, China (including Hong Kong), Pakistan, and Germany are all parties to the Basel

[1] http://laws-lois.justice.gc.ca/eng/regulations/SOR-2005-149/page-1.html
[2] http://wiki.ban.org/images/1/17/ScamRecyclingContinuesUpdate_2.pdf

Convention. Under the Convention, all exports by Parties would require that the importing country is notified prior to export by the government of Canada and consented to by the receiving government of China, Pakistan or Germany. And, if they had been notified to China or Pakistan, Canada would have been obliged to prohibit the exportation due to the fact that these two nations forbid the import of hazardous wastes from anywhere (in the case of Pakistan) and from OECD countries (in the case of Hong Kong). The shipments to Germany and to the US can legally take place using other agreements but even under these agreements prior notification and consent would still be required.

Three of the seven exports, and three of four (75%) that were shipped to developing countries, all came from one company -- Electronic Recycling Association (ERA) which has had a history of similar exports in the past. This report takes a closer look at this company and its history and calls for greater scrutiny and investigation of what appears to be, a repeat offender.

The report notes that Canadian industry and government could do far more to rectify the illegal and unsustainable exports from Canadian shores to developing countries. In this regard, it is of great concern that the Electronics Product Stewardship Canada (EPSC), a consortium of electronics manufacturers operating in Canada, has removed all references to the Basel Convention and issues regarding the exports of hazardous wastes to developing countries from their performance standard for program recyclers. This fact may play a role in creating confusion and negligence among recyclers in Canada as to the legality of their exports.

The government of Canada needs to do a far better job in two respects. First, it needs to ratify and implement the Basel Ban Amendment, forbidding all exports of hazardous wastes of any kind and for any reason from being exported to developing countries. This agreement is on the cusp of going into global force and it provides Canada with the opportunity of being a last-minute hero with respect to promoting global environmental justice. And, Canada needs to do a far better job of enforcing the Basel Convention rules that currently apply, particularly in regard to the exportation from its electronics recyclers.

Port of Vancouver where most of the likely illegal exports leave Canada.

Key Findings

1. Canada continues to allow exports of hazardous e-waste (16%).
2. Canada continues to allow exports of hazardous e-waste to flow to developing countries (in this case, China and Pakistan). In our study, 9.3% of the deployments were exported to developing countries. These are all likely to be illegal.
3. The export rate of recyclers (16%) is far less than the export rate from recyclers identified 2 years earlier in the United States (34%) but is still of significant concern, especially in light of the fact that Canada has a legal obligation under the Basel Convention and the US does not.
4. Canada generates 724 kt of e-waste per year. Thus, our findings, of the seven units tracked leaving Canada, if extrapolated, could represent as much as 116,000 tonnes of e-waste exported per annum (67,332 tonnes likely shipped illegally to developing countries)
5. Local contamination and harmful exposure in the receiving communities in Hong Kong and Pakistan is likely and would include pollution and exposure from heavy metals, mercury, dioxins, furans, and polycyclic aromatic hydrocarbons.
6. 3 of the 7 exports and 3 of the 4 that went to developing countries were exported by one non-profit organization -- Electronics Recycling Association (ERA) that has a long history of similar exports.
7. 3 of the 7 exporting companies involved in the documented exports were ARMA/EPRA approved processors and R2 Certified. 4 were not certified to any electronics recycling standard.
8. A consortium of electronics manufacturers operating in Canada known as the Electronics Product Stewardship Canada (EPSC) does not require Basel Convention Export controls in their standard even though Canada is a Basel Party.
9. EPSC only recognizes the R2 standard, which is not fully compliant with the Basel Convention, but does not recognize the e-Stewards Standard which is.
10. Canada remains one of 23 countries still needed to ensure entry into force of the Basel Ban Amendment, which would prohibit the export of hazardous wastes of all kinds from developed to developing countries. Currently, the Ban Amendment lacks two of these 23 countries to become international law.

The Global e-Waste Dumping Crisis

Due to the ubiquitous use of toxic metals such as cadmium, lead, and mercury, as well as organic compounds such as brominated flame-retardants, e-waste is almost always considered hazardous waste under the Basel Convention. The Basel Convention is designed to strictly control the export of hazardous wastes from developed to developing countries. It is a regulatory response to the economic phenomenon of avoiding the costs of environmental protection by externalizing them via trade to locations least able to deal with such wastes and where its management may be harmful to human health and the environment.

Since our first groundbreaking report and film "Exporting Harm: The High-Tech Trashing of Asia", released in 2002, Basel Action Network (BAN) has continued to observe, document and campaign against the trade of hazardous e-waste as it has moved inexorably and often illegally from rich developed countries to poorer global communities, particularly in Asia. These movements take place for economic reasons and are instigated by those wishing to avoid the costs of proper, but more expensive waste management as required or are norms in Japan, Korea, Australia, New Zealand, in North America and in Europe.

The improper processing that occurs in the informal sectors found in importing countries such as China, Pakistan, India, Nigeria, Ghana, and more recently in Southeast Asia, first documented by BAN, has now been quantified by numerous scientific studies conducted in the wake of BAN's investigations. These scientists have found very serious negative environmental and occupational health impacts, with some of the pollution and exposure levels rating as the worst ever recorded. And the identified dangers are not just isolated to the immediate victims. Due to the phenomenon of long-range transport of atmospheric pollutants,

Boy on Guiyu e-waste dump from the report “Exporting Harm.” This lad came to symbolize the newly discovered e-waste crisis. Copyright BAN 2001.

Sampan boats being loaded at the riverbank with U.S. CRTs, in a massive smuggling operation that went on for years at Mong Cai, Vietnam near the Chinese border. Copyright BAN 2010.

as well as international trade in contaminated food or products, indirect impacts can be felt across the entire planet. For every computer, phone or peripheral, exported to such a fate, the world's biosphere becomes ever more toxic.

But to be clear, what BAN has highlighted in all of our reporting is not *the* fundamental problem, so much as a false solution. *The problem* is that we as a society are creating and processing and consuming far too much toxic material -- far too often. We are all complicit, as we continue to purchase unsustainable, short-lived electronic products, as are the manufacturers, including electronics manufacturers who give us little choice but to do so.

The solution with respect to e-waste involves creating and consuming less hardware, using no more toxic materials, and ensuring that the hardware that is produced is readily upgradable, repairable and long-lived. And, when all re-use options are exhausted -- readily and safely recyclable. In other words, the solution to externalizing the costs in the form of pollution and wasted resources to the vulnerable lies in ensuring and designing for internalizing the costs at the outset of product conception.

What is *not* a solution to the problem identified is externalizing costs and sending harm to the world's desperate workforces in disparate, forgotten places on earth. But we realize that as long as these quick and dirty false solutions remain un-penalized they will continue to be exploited. For this reason, it is paramount to continue to mount pressure to enforce the Basel Convention and the Basel Ban and prevent all countries from using their global neighbors as dumping grounds. The Basel Convention exists to prevent this outcome and further proposes to achieve this goal through the implementation of a proposed amendment (the Ban Amendment) adopted in 1995. When in global force, the Ban Amendment would forbid all forms of exports of hazardous wastes from the rich OECD and EU group of developed countries to all other countries of the world.

However, a handful of other countries known collectively as the JUSCANZ, which include Japan, the United States, South Korea, Canada, Australia, and New Zealand, while remaining Basel Convention Parties (except the US), fight vehemently against the Ban Amendment and refuse to ratify it. Today, though, that amendment has been ratified by 95 countries and is but two Parties away from entering into force.

History of BAN's e-Waste Tracking

Ground Zero: Guiyu

In 2002 BAN first published the groundbreaking report and film: Exporting Harm: The High-Tech Trashing of Asia. This report, which centered on what at the time, was the world's largest electronic waste dumping ground created the first real awareness of the e-Waste crisis. The story of this first visit was featured in the New York Times and soon thereafter was widely reported around the world. Following these first discoveries of the world's e-waste piling up in Guiyu, China, (near Shantao in Guangdong Province), BAN began its investigations into the smuggling pathways into Guiyu and other areas in China and around the world that receive e-waste from developed countries of the world. These investigations continue to this day.

Hong Kong's Role in e-Waste Smuggling

At the beginning of their research BAN was able to find pathways by following-up on numerous solicitations being made by Hong Kong-based waste brokers to recyclers in the US all seeking to buy electronic scrap to send to China. We quickly became aware of the role of Hong Kong as a major smuggling port and the use of the New Territories area for staging facilities for the scrap equipment. In the period between 2004-2009, BAN made numerous visits to the New Territories area to observe and document the smuggling operations first hand. The operations were initially concentrated in the Ping Che area but over the course of time began widening in range to encompass the entire length of New Territories, which stretches across Hong Kong's northern border with Mainland China. There, one could openly observe intermodal containers arriving by truck from the port, their seals being broken, and the e-waste contents unloaded and placed behind tall steel fences. Such operators amassed large collections of cathode ray tubes (CRTs), printers, computers, lead-acid car batteries and other electronic scrap from overseas. The waste was, in those days, not dismantled or recycled in Hong Kong but rather stored temporarily, then sorted, and finally reloaded onto smaller trucks and driven across the border into mainland and on to Guiyu and other Guangdong province destinations.

In 2008 and in 2009, BAN worked with the US television news magazines CBS's 60 Minutes, and PBS's Frontline respectively to illustrate the smuggling pathway from the US west coast, to Hong Kong port, on to New Territories, and onward again to Guiyu. Also in 2008, we worked with the CBC to produce the documentary e-Waste Dumping Ground.

Those award-winning reports were widely viewed and contributed to putting new, but not decisive pressure on governments in both the United States and in China/Hong Kong to do something to staunch the illegal trade in e-waste from North America to China. One of the results was that Hong Kong's EPD became stricter and began to enforce against imports of lead-acid batteries and CRTs entering the country. This was important because the disposal of CRTs (the older large and heavy TVs and computer monitors) used in that time, was reaching a peak, as the entire developed world switched to flat-screen LCD monitors.

During this period BAN conducted much of its e-waste tracking research by following

Intermodal containers by their numbers and cross-referencing these with online shipping company data. In this way, we could determine the ship, the receiving port and the date of arrival. Consequently, we were able to alert authorities, including the Hong Kong EPD of pending shipments. Over the course of the years 2008 to 2013, BAN was able to track 283 container exports from the US and Canada with 72% of these ending up in Hong Kong or Mainland China. Below one can see a table of the container tracking results from BAN's work between the years of 2008 and 2013.

China Closes the Door

The Hong Kong New Territories electronics junkyards were operational as purely smuggling depots for at least a decade. However, in the period between 2012-2015, Mainland China progressively began to enforce their border controls against e-waste trafficking. First, they completely shut down the Vietnam border pathway with a sweeping customs action at Dongxiang in 2014. And, nationwide, in an effort to screen out "dirty" scrap streams with high levels of contamination they heightened customs operations up and down the coast. Further, they required inspections of shipments by a Chinese agency conducted in the US prior to export.

These efforts were collectively known as the “Green Fence” and were very successful at reigning in smuggling. Under the "Green Fence", laws such as the e-waste importation ban that has been the law since the late 1990s in China were being enforced and smuggling and the enablers of smuggling were prosecuted. This led to direct imports of whole electronic equipment no longer possible.

In 2015, China took an even more dramatic step when they finally, after a decade of promises to do so, closed all of the informal and storefront operations of Guiyu down. Most of these operators were engaged in the highly polluting enterprise of cooking circuit boards, washing and melting parts, smelting metals and using acids to strip gold from the chips. In a joint federal,

BAN Container Tracking from North American Ports to Foreign Destinations 2008 – 2013

Country	2008	2009	2010	2011	2012-13	Total	%
Hong Kong	58	32	32	26	28	176	62
China	5	5	10	5	2	27	10
Pakistan	1	4	0	2	8	15	5
Vietnam	6	2	5	1	0	14	5
Indonesia	1	1	10	0	0	12	4
Malaysia	8	0	0	0	0	8	3
Taiwan	1	5	0	1	0	7	2
Thailand	1	1	2	0	0	4	1
South Korea	3	0	0	0	0	3	1
Macau	0	0	0	3	0	3	1
Singapore	0	1	1	0	0	2	1
Countries receiving one container: Belgium, Côte d'Ivoire, Dubai, Egypt, Honduras, India, Japan, Nigeria, Peru, Saudi Arabia, South Africa, Uruguay.						12	5
TOTAL						**283**	

state and local edict, they declared all such operations shut down and forced any that wished to remain in business to move into a massive, newly constructed industrial park just outside of town. Moreover, they ensured that all e-waste coming into the park would be inspected and that no waste from abroad would be permitted. Guiyu today is now fundamentally transformed and a BAN unannounced inspection in December of 2015 confirmed that no imported waste is allowed through the gates of the industrial park and the town itself is a ghost town.

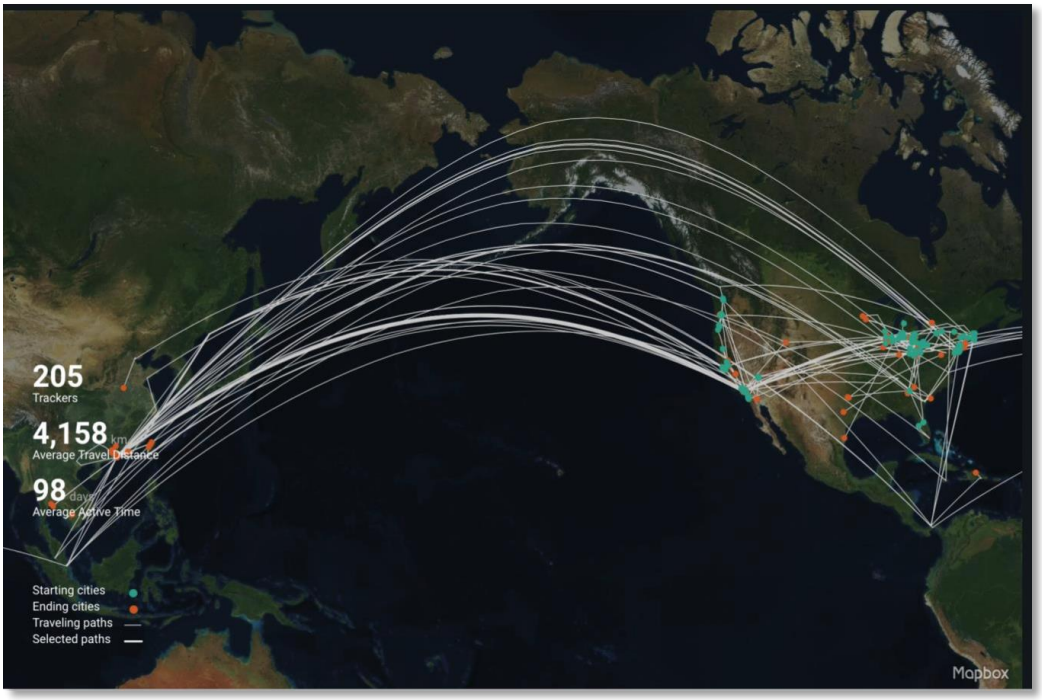
The complete closure of the informal sector in Guiyu and a prohibition of imports coming there was a belated, but major victory for the environment. Had it not taken more than a decade, we would have all celebrated more.

The Promise of GPS Tracking

Container tracking was useful to a degree; it could give us an indication of the port a container arrived at and show destination destination country trends, but it could not provide the precise addresses of the consignees; we could not follow the e-waste past the port. Without the consignee address, we could not be sure the fate of the waste nor allow the importing countries to prosecute the illegal importers. It was during our work to try and find the end-points of the container loads crossing into China from Vietnam when we decided to experiment with GPS trackers to ascertain where all of those CRTs were ending up.

We worked in this period (2011-2013) with the Massachusetts Institute of Technology's SenseAble Cities Labs to develop the best means of tracking actual waste.

Our work, while not ultimately successful in finding the endpoints of the CRT glass, did do an excellent job of following the plastic of the CRTs. Subsequent efforts to implant the tracker into the glass CRT were unsuccessful. The success of the plastic housing tracking, however, convinced us that there was a promising future in GPS



MIT SenseAble City Labs computer rendition of the e-Trash Transparency Project. The brighter white line shows transport to Los Angeles harbor in California and voyage to Hong Kong. Copyright MIT SenseAble City Labs and BAN. 2016.

tracking. If one could properly attach the tracker, provide it with enough battery life, the accuracy was truly amazing, bringing us to hidden piles of e-waste in warehouses and behind bushes and trees at farms in China, Malaysia, and Indonesia.

We became interested in GPS tracking for another reason as well. Certain industrial interests began to make claims that the waste trade BAN had described was not really a major problem. Studies funded by the US and Canadian governments drew conclusions based on using surrogate product data, or corporate surveys to conclude that the waste trade problem was not a serious matter. But none of these studies used real data of real waste in real time. BAN published an article in August of 2015 entitled *"Exporting Deception: The Disturbing Trend of Waste Trade Denial,"* describing the dangers of this new denial. Yet we knew that what was truly necessary to set the record straight, was real data such as that which could be provided by GPS devices implanted into actual e-waste.

e-Trash Transparency Project

In 2014 BAN received a major grant by the Body Shop Foundation allowing BAN to launch the e-Trash Transparency Project[3], which was at this time, the largest deployment of GPS trackers to monitor electronic waste trade in history. Central to the project, as suggested by its name, is the belief that the public has a right to know how its hazardous waste is being managed and that all recyclers, manufacturers, and enterprises should not fail to make that information public. Just as we precisely know where our sewage goes, and which landfills our municipality uses, the public should have the right to know how their hazardous e-waste is being handled.
In total BAN deployed 205 trackers in the US with a significant volume of the tracked waste moving directly to Hong Kong, New Territories. 40% of the tracker enabled devices delivered to recyclers ended up overseas. Visits to the end-points revealed that no longer were these sites smuggling but rather were involved in dirty dismantling. All of these discoveries and data were made available in the publication of two major reports, *"Disconnect: Goodwill and Dell Exporting the Public's E-waste to Developing Countries"*[4], *"Scam Recycling. e-Dumping on Asia by US Recyclers."*[5] and two updates.

The project resulted in a significant discovery, which could only have been understood by the use of GPS trackers. We learned by visiting the tracker end-points with follow-up site visits to the reported latitude and longitude coordinates, that the former smuggling depots of old, were now the new locations for the informal dismantling that used to take place in Guiyu. It seemed that the enforcement actions initiated by Mainland China on their border had resulted in a serious impact on Hong Kong. Guiyu had passed the mantle for dirty recycling and dismantling on to New Territories, Hong Kong.

Hong Kong Reacts to GPS Findings

The extensive media coverage of BAN's e-Trash Transparency Project in Hong Kong created a political firestorm in Hong Kong's Legislative Council and helped instigate new reforms in electronics recycling policy.[6]

[3] http://www.ban.org/trash-transparency/
[4] https://s3.amazonaws.com/ban-reports/Trash+Transparency/Disconnect+-+Goodwill+and+Dell+Exporting+the+Publics+E-waste+to+Developing+Countries+Report+-+Print+Version.pdf
[5] http://wiki.ban.org/images/1/16/ScamRecyclingReport-print.pdf
[6] http://www.info.gov.hk/gia/general/201607/06/P201607060492.htm

Already the Hong Kong government was preparing new extended producer responsibility legislation -- The Promotion of Recycling and Proper Disposal (Electrical Equipment and Electronic Equipment) (Amendment) Ordinance passed in March of 2016.

That legislation would see manufacturers footing the bill for Hong Kong citizens' own e-waste recycling and a new government-owned recycling center established at the EcoPark. However, that legislation was mute on the imported e-trash finding its way to New Territories. This was partially rectified in no small part due to our tracker project.

The EPD also engaged in numerous enforcement inspections and raids of the facilities BAN's trackers found as well as from site discoveries of their own. Prosecutions and penalties were levied against operators and while the amounts were minimal, the impact was felt and well publicized.

Most effective was a new licensing package of operational requirements for the junkyard electronics recyclers under the Promotion of Recycling and Proper Disposal (Electrical Equipment and Electronic Equipment) (Amendment) Ordinance.

This new legislative package will apply to eight categories of regulated electrical equipment: washing machines, refrigerators, air-conditioners, televisions, computers, printers, scanners and monitors. Any person engaged in the storage, treatment, reprocessing or recycling of regulated WEEE must obtain a waste disposal license, while a permit will be required for the import and export of regulated WEEE by these newly regulated facilities. The aim of the new controls is to ensure environmental requirements are met throughout the e-waste treatment and dismantling process, and the discharge generated does not pollute the environment or cause nuisance to the neighboring area. These controls will begin December 3, 2018.

HK01 worked with BAN to produce a powerful series on the New Territories junkyards. Copyright HK01 2016.

China's National Sword

By far the most significant development on the e-waste trade in the Asia Pacific Region took place at the beginning of this year -- 2018**.** China sealed its deal to turn away e-waste smuggling by implementing its "National Sword" policy. This policy, which is said to be an initiative authorized by President Xi himself, has gone further than the former "Green Fence" policy. It is a very strict import prohibition for almost all forms of scrap including e-scrap. It will not likely go challenged at the WTO as such a ban is absolutely within the rights of Basel Convention Parties and such rights were agreed on a very large majority multilateral basis. Despite a lot of industry protest, there are no signs that China will relent and allow scrap flow towards China. They appear to finally be realizing the disadvantage of importing hazardous residues and scrap that is very difficult without causing serious pollution. This National Sword Policy appears to be responsible for some of the very recent trends being demonstrated by the GPS tracking results -- including the most recent trend -- the Southeast Asia waste invasion and to Pakistan.

e-Waste in Pakistan

Even prior to the closure of China's borders and markets, and even prior to our GPS findings, Pakistan was increasingly seen as a target for the world's e-waste. Now, following China's border closure to all manner of scrap, Pakistan appears to be growing in a dubious role of becoming, along with Thailand, one of the prime targets for e-waste traders. This appears to be true despite the fact that Pakistan has officially notified all Basel Parties via the Basel Secretariat that they possess an import ban for all forms of hazardous waste.

Much of the equipment sent to Pakistan is labeled or purported to be second-hand materials destined for reuse, but only some of the imported material is thought to be actually reusable and marketable. The left-over waste, in the form of unrepairable parts or equipment, is then left for local “recycling” efforts in Pakistan and no doubt contributes, as it did for years in China, to harmful residual contamination and human exposure to damaging pollutants.

In this study our tracker has shown us a path through Karachi, the major seaport receiving intermodal containers from overseas onward to Peshawar. Below in the tracker section, we include pictures taken at the computer market there. These dirty recycling/management operations are very similar to what we have observed in China and Hong Kong. Pakistan, for its part, needs to do a better job ensuring that their borders are enforced against electronic wastes masquerading as electronic goods. Pakistan also needs to ratify the Ban Amendment to ensure a strong message is sent to the global community that hazardous e-waste is not welcome there.

1. According to section 13 (prohibition of import of hazardous waste) of Pakistan Environmental Protection Act 1997, “no person shall import hazardous waste to Pakistan and its territorial waters, exclusive economic zone and historic waters”.

2. Import Policy Order 2016, inter-alia, also bans import of hazardous waste as defined and classified in Basel convention except where import is specifically authorized by the government of Pakistan.

Pakistan listing of its national laws on waste trade. Basel Convention website.

The Canadian Trackers

Introduction

Electronic waste (e-waste) is the fastest growing waste stream today and the world's most globally traded hazardous waste. The most significant global flows of hazardous e-waste move from the West Coast of North America to Asia. Canada is no small contributor to the global e-waste mountains, contributing approximately 724kt of e-waste per annum.[7] BAN's past investigations (see ERA data below as an example) have shown that a steady flow of illegal exports continues to move from Canada, primarily via the port of Vancouver, to Asian ports.

BAN's investigations of Canadian e-waste trade began in 2002 following our first visit to Guiyu, China in 2001. Following the March 2002 publishing our US report entitled Exporting Harm, we completed a Canadian version later that year on what we had learned about Canada's role in the Guiyu discovery. This report was entitled *Exporting Harm: The High-Tech Trashing of Asia / The Canadian Story*.[8] Later, in 2007-2008 we worked with the Canadian Broadcasting Company in their documentary production -- *The e-Waste Dumping Ground*.[9] In 2014, BAN worked with investigative reporter Larry Pynn of the Vancouver Sun to expose the e-waste trade activities of Vancouver area e-waste recyclers and exporters.[10] All of these studies revealed e-waste exports from Canada in apparent violation of the Basel Convention -- the world's only global treaty on waste and waste trade, ratified by Canada in 1992. The Basel Convention today boasts 186 Parties -- most of the world's countries including China, Germany, and Pakistan -- three of the four countries discovered in this report as recent recipients of Canadian e-waste exports.

In this latest reporting, made possible by a generous grant from the Hong Kong-based WYNG Foundation, we have for the first time made use of GPS tracking technology. A description of that technology follows.

Certifications and Producer Responsibility Schemes in Canada

Rather than follow Europe's lead in legislating producer responsibility for end-of-life electronics as was done with the EU's WEEE Directive, the Canadian government opted instead to work in public/private partnership and allow the manufacturers to manage Canada's e-waste recycling voluntarily.

In 2003 manufacturers set up Electronics Product Stewardship Canada (EPSC) -- a non-profit organization comprised of 30 leading electronics manufacturers that sell their products in Canada. EPSC represents the interests of manufacturers in shaping policy and programs to provide electronics recycling solutions. To date EPSC, through EPRA -- the Electronics Products Recycling Association also created by the manufacturers, has established electronic recycling stewardship programs in British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia, Ontario, PEI, Quebec, and Saskatchewan -- representing together over 90% of Canada's population.

[7] https://www.itu.int/en/ITU-D/Climate-Change/Documents/GEM 2017/Global-E-waste Monitor 2017.pdf
[8] http://wiki.ban.org/images/e/e1/Exporting_Harm_canada.PDF
[9] https://www.cbc.ca/player/play/1305152453
[10] http://www.vancouversun.com/technology/Metro+Vancouver+companies+investigated+unlawful+export+waste+Asia+with+video/8458219/story.html

EPRA oversees and manages the recycling of end-of-life electronics from consumers in the aforementioned provinces. To ensure EPRA programs responsibly manage consumer e-wastes, EPRA will only work with recyclers that have been approved through the Recycler Qualification Program (RQP) and in accordance with the Electronics Recycling Standard (ERS). Further EPRA lists approved collection depots.

In Alberta, another organization known as the Alberta Recycling Management Authority ARMA was set up separately to accomplish similar take-back and recycling for electronics and three other types of waste.

In this report, we have endeavored to cross-reference our tracker enabled device deployments with the EPRA and ARMA programs.

Likewise, we have noted which of the processing facilities are R2 Certified and which are not. The EPSC has officially adopted the R2 program as their model for responsible recycling and the not the e-Stewards Standard despite the fact that e-Stewards is far stricter with respect to exports, occupational safety and health, and downstream due diligence.

What we Found Out -- By the Numbers

In 2017, between March and August, the Basel Action Network (BAN) deployed 43 trackers across Canada. 10 were deployed in British Columbia, 10 in Alberta, 1 in Saskatchewan, 1 in Manitoba, 13 in Ontario, 7 in Quebec and 1 in Nova Scotia.

The record of each of these is summarized in the Tracker Summary Table below.

Of these, deployments 7 (16%) were exported, 4 (9.3%) moved to a Canadian Recycler, 6 (14%) likely moved to a Canadian Recycler, 1 (4.3%) moved to a landfill, 15 (34.9%) moved to an unknown location, and 10 (23.25%) never moved from the place they were deployed. One device is still reporting.

Of the 43 tracker-enabled devices deployed, 30 went to government/industry-approved program such as EPRA.

Of the exports, the “Canadian Tracked Devices Exported Table” below shows that three R2 certified companies were involved in possibly illegal exports to *developed* countries. But no government/industry approved or Certified companies were involved in exports to *developing* countries.

It is important to note that our deployment involving just 43 e-waste units (assuming an average of about 5 kg. each) is small in relation to the annual national weight of 724,000 tons. This small sample size makes extrapolation an uncertain exercise except for the sake of argument.

Nevertheless, it is clear that seven exported units are arguably indicative of a far bigger total mass than simply seven devices weighing approximately 35 kilograms. If we extrapolate for the sake of exploring what a scaling of the problem could well mean, we can take our definite export rate of 16%, and arrive at an annual figure of 115,840 metric tons of hazardous waste exported (very possibly illegally). This is the equivalent of about 3,217 40-foot intermodal containers of hazardous waste leaving Canada for export per annum!

If we wish to approximate the exports to developing countries (4 or 9.3%), we are looking at 67,332 metric tons or, 1870 intermodal containers per annum. If these extrapolations represent anything close to the truth, we have a serious problem of likely illegal and harmful export from Canada.

Methodology

Our Canadian study was designed to replicate what can happen in normal consumer actions to dispose of their electronic waste. The study was designed to be random and rely heavily on the government/EPRA/ARMA websites that a consumer would likely find and use.

BAN continued to use the same tracking hardware as used in the initial e-Trash Transparency Project of the US. However, this time we made a vital battery switch to eliminate the potential fire risk from lithium-ion batteries.

The device types were:

• CRT (cathode ray tube) monitors or CRT televisions
• LCD (liquid crystal display) monitors or TVs containing CCFLs (mercury-containing cold cathode fluorescent lamp)
• inkjet or laser type printers

These electronic devices were chosen because each contains components that qualify the equipment as hazardous waste, and thus each should be controlled under international law (e.g., the Basel Convention). Additionally, these devices have sufficient room inside to plant trackers and batteries. All units were made non-functional and not economically repairable prior to deployment to make the legality of the export issue more certain and distinguish from those claiming their exports are to support alleged reuse.

To establish and maintain a chain of custody, and proof of delivery, BAN recorded a video of each tracker installation in the e-waste equipment as well as each deployment -- usually a walk-up to a loading dock or office.

Proof of recycling was also received (e.g., receipt) when provided.

How the GPS Devices Work

The trackers are like a stripped down smartphone with no keyboard, no screen, no camera, no audio recording devices and no speakers. They can, however, use the global cellular phone systems to make text message phone calls, and they have a GPS reader. These trackers are attached to non-lithium ion battery packs to ensure a life-span of one year or more. The trackers can respond from virtually any country in the world.

Typically, we program the trackers to "wake up" from a low energy consuming sleep mode every 24 hours. The trackers we use can be programmed remotely. They then "look" for satellites. If they find three or more, they can geo-locate the tracker very accurately (within a radius of about 20 meters). Then they record the latitude and longitude and send that data to our server. If the tracker cannot "find" the satellites, then they simply send the latitude and longitude of the nearest cell tower. That latter type of signal can tell us what city or country the tracker is in but cannot provide a reading of the property it is on. In the tables below, we only list latitudes and longitudes when actual GPS readings are made. All other location listings are from cell tower readings usually within a range of 20km.

For more information regarding our tracking technology visit BAN's website of commercial service of this technology known as EarthEye at www.eartheye.org.

Export Overview

Canadian Tracked Devices Exported						
Tracker Number	Deployment Location	Originating State/Province	Receiving Country	**Certified Recycler (R2 or e-Stewards)**	Approved Depot or Processor	Type of Device
BC141049	ERA, Richmond	British Columbia	Hong Kong	none	no	printer
BC135488	ERA, Richmond	British Columbia	Pakistan	none	no	LCD
AB135645	Uniway ERA, Edmonton	Alberta	Hong Kong	none	no	LCD
AB140629	Geep, Edmonton	Alberta	USA	R2	yes	LCD
ON154407	CDI, Markham	Ontario	Germany	R2	yes	CRT
PQ136213	Evolu-TIC Outaouais, Gatineau	Quebec	USA	R2	yes	CRT
PQ140264	Recycle Informatique, Quebec	Quebec	Hong Kong	none	no	LCD
TOTALS	***7***	**BC (2)** **Alberta (2)** **Ontario (1)** **Quebec (2)**	**Hong Kong (3)** **Pakistan (1)** **USA (2)** **Germany (1)**	**R2 (3)** **none (4)**	**yes (3)** **no (4)**	**LCD (4)** **CRT (2)** **printer (1)**

Trackers Deployed

Below is a comprehensive list of all the trackers deployed in Canada between March and August 2017. The Approved Depot column cross-references the following programs:
British Columbia: https://www.recyclemyelectronics.ca/bc/where-can-i-recycle/
Alberta: https://www.albertarecycling.ca/recycling-depots/?city=Edmonton&postal_code=&type=electronics,
Saskatchewan: https://www.recyclemyelectronics.ca/sk/about-us/,
Nova Scotia: https://www.recyclemyelectronics.ca/ns/about-us/,
Manitoba: https://www.recyclemyelectronics.ca/mb/about-us/,
Ontario: https://www.recyclemyelectronics.ca/on/,
Quebec: https://www.recyclemyelectronics.ca/qc/where-can-i-recycle/

The Approved Processor column shows recycling facilities approved under the EPRA program's Recycler Qualification Program (RQP) or the Electronics Reuse and Refurbishing Program (ERRP) found here:
https://reporting.recyclemyelectronics.ca/?process=extranet_rqo_list&language=en
For ARMA we drew the approved processors from this document:
file:///Users/jimpuckett/Downloads/Compliance_Assurance_Summary_Report_2018.pdf

Tracker Number	Deploy Site	Province	Deploy Date dd-mm-yr	Approved Depot	Approved Processor	Certified	Device Type	Last Reported Location
BC 135389	Best Buy Victora 3450 Uptown Blvd #200 Saanich, BC	British Columbia	29-03-2017	Yes	N/A	N/A	LCD	Moved to Edmonton Alberta
BC 135686	CRD Hartland 1 Hartland Ave, Victoria, BC	British Columbia	29-03-2017	Yes	N/A	N/A	Printer	Moved to Chilliwack, BC
BC 335335	ERA 11280 Twigg Pl. Unit 125, Richmond, BC	British Columbia	28-03-2017	No	No	None	CRT	Moved to Grandview, BC
BC 135488	**ERA 11280 Twigg Pl. Unit 125 Richmond, BC**	**British Columbia**	**28-03-2017**	**No**	**No**	**None**	**LCD**	**Exported to Peshawar, Pakistan**
BC 141049	**ERA 11280 Twigg Pl. Unit 125 Richmond, BC**	**British Columbia**	**28-03-2017**	**No**	**No**	**None**	**Printer**	**Exported to New Territories, Hong Kong**

Tracker Number	Deploy Site	Province	Deploy Date dd-mm-yr	Approved Depot	Approved Processor	Certified	Device Type	Last Reported Location
BC140868	FCM Recycling 1020 Cliveden Ave, Delta, BC V3M 5R5, Canada	British Columbia	27-3-2017	Yes	RQP 2015	R2	Printer	No movement
BC140280	Free Geek 1820 Pandora St, Vancouver, BC V5L 1M5, Canada	British Columbia	28/3/2017	No	No	None	LCD	Moved to Hamilton, Ontario
BC348397	Lee Bottle Depot 7385 Buller Ave, Burnaby, BC V5J 4S6, Canada	British Columbia	28/3/2017	Yes	N/A	N/A	CRT	Moved to Teck Metals in Trail, BC
BC140389	London Drugs 7280 Market Crossing, Burnaby, BC V5J 0A2, Canada Drugs	British Columbia	28/3/2017	No	N/A	N/A	Printer	Moved to Calgary, Alberta
BC163473	Regional Recycling 960 Evans Ave, Vancouver, BC V6A 2L2, Canada	British Columbia	28/3/2017	Yes	N/A	N/A	LCD	Likely at Bailey Sanitary Landfill in Chilliwack, BC
AB140363	Edmonton Eco Station 5150 99 Street, Edmonton, Alberta	Alberta	24/4/2017	Yes	N/A	N/A	CRT	No movement

Tracker Number	Deploy Site	Province	Deploy Date	Approved Depot	Approved Processor	Certified	Device Type	Last Reported Location
AB135645	**Uniway ERA Drop site 6744 99 St NW, Edmonton, AB T6E 5B8**	**Alberta**	**24/4/2017**	**No**	**N/A**	**N/A**	**LCD**	**Exported to New Territories, Hong Kong**
AB141130	Hi Tech Recyclers 14976 114 Ave NW, Edmonton, AB T5M 4G4,	Alberta	24/4/2017	Yes	ARMA	None	LCD	Moved to Cambridge, Ontario, Canada
AB135371	Best Buy Edmonton 17539 Stony Plain Rd, Edmonton, AB T5S 2S1,	Alberta	24/4/2017	Yes	N/A	N/A	Printer	Likely at E-Cycle Solutions in Airdrie, Alberta
AB140660	ERA 6744 99 St NW, Edmonton, AB T6E 5B8,	Alberta	24/4/2017	No	No	None	Printer	Likely moved to Hi Tech Recyclers in Edmonton, Alberta
AB136387	Technotrash 537 Manitou Road SE, Calgary, Alberta T2G 4C4	Alberta	24/4/2017	Yes	ARMA	None	CRT	Moved to Technotrash Recycling Facility in Taber, Alberta
AB140413	Recycle Logic 8075 49 Ave, Red Deer, AB T4P 2V5,	Alberta	24/4/2017	No	ARMA	None	Printer	Moved to Calgary, Alberta

Tracker Number	Deploy Site	Province	Deploy Date	Approved Depot	Approved Processor	Certified	Device Type	Last Reported Location
AB136114	Shanked Computer Recycling Inc. 11602 257th St, Acheson, AB T7X 6C3	Alberta	24/4/2017	Yes	ARMA	None	Printer	Moved to Acme scrap iron and metals in Edmonton, Alberta
AB133715	Staples Calgary 3030 32 Ave NE, Calgary, AB T1Y 7A9, Canada	Alberta	24/4/2017	No	N/A	N/A	LCD	Likely at E Cycle Solutions in Airdrie, Alberta
AB140629	**GEEP 5505 72 Ave SE unit 9, Calgary, AB**	**Alberta**	**24/4/2017**	**Yes**	**ARMA**	**R2**	**LCD**	**Moved to Chino, California**
SK141379	Regina SARCAN 1421 Fleury St, Regina, SK S4N 7N5,	Saskatchewan	26/6/2017	Yes	No	N/A	LCD	Moved to Metals Recovery Facility in Edmonton, Alberta
MB135546	Mother Earth 771 Main St, Winnipeg, MB R2W 3N5,	Manitoba	28/6/2017	Yes	No	None	LCD	Looks to be at a private residence in Thornhill, Manitoba.
ON154407	**CDI 75 Clegg Road, Markham, ON L6G 1A9,**	**Ontario**	**19/7/2017**	**No**	**ERRP**	**R2**	**CRT**	**Exported to Lünen, Nordrhein-Westfalen, Germany**

Tracker Number	Deploy Site	Province	Deploy Date	Approved Depot	Approved Processor	Certified	Device Type	Last Reported Location
ON136262	ERS 2450 Lawrence Ave E, Scarborough, ON M1P 2R7	Ontario	19/7/2017	No	No	R2	LCD	Moved to Peel Scrap Metal Recycling in Mississauga, Ontario
ON135272	ADL Process 301-500 Keele St, Toronto, ON M6N 3C9	Ontario	19/7/2017	Yes	RQP 2010	R2	Printer	No movement
ON141247	Greentec via Burlington Fire Dept 4100 Dundas Street, Burlington, ON L7M 4K7	Ontario	19/7/2017	Yes	RQP 2010 ERRP	R2	LCD	Likely at Preston Plastics Reprocessing in Cambridge, Ontario
ON141239	ERA #15 489 Brimley Rd, Toronto, ON	Ontario	19/7/2017	No	No	None	Printer	Likely moved to E Cycle Solutions in Mississauga, Ontario.
ON140470	FCM 2900 Loyalist Street, Cornwall K6H 6C8	Ontario	31/7/2017	Yes	RQP 2010 RQP 2015	R2	Printer	No movement
ON135603	ReBoot 103-550 Bayview Avenue Toronto, ON M4W 3X8	Ontario	19/7/2017	No	No	None	LCD	Moved to Combined Metal Industries in Toronto, Ontario
ON135991	Com2 Recycling 6145 Ordan Drive #2, Mississauga, ON. L5T 2C9	Ontario	19/7/2017	Yes	RQP 2010 RQP 2015	R2	LCD	No movement

Tracker Number	Deploy Site	Province	Deploy Date	Approved Depot	Approved Processor	Certified	Device Type	Last Reported Location
ON136304	Revolution ITAD 33 Capital Dr, Nepean, ON K2G 0E7	Ontario	19/7/2017	Yes	No	R2	LCD	No movement
ON140843	Harbour Metals 1100 Montreal St, Thunder Bay, ON P7E 6T8	Ontario	28/6/2017	Yes	No	None	LCD	No movement
ON140579	Arlen Recycling 601 Canarctic Dr, North York, ON M3J 2P9	Ontario	19/7/2017	No	No	None	Printer	Moved to Tal Metal in Vaughan, Ontario
ON140967	Toronto Transfer Station 400 Commissioners St, Toronto, ON M4M 3K2	Ontario	19/7/2017	Yes	N/A	N/A	CRT	No movement
ON140272	BFI Transfer Station 3354 Navan Rd, Navan, ON K4B 1H9,	Ontario	19/7/2017	Yes	N/A	N/A	CRT	Moved to Dorval, Québec
PQ653978	Ecocentre Lasalle 7272 Saint-Patrick St, Lasalle, QC H8N 2J7,	Quebec	1/8/2017	Yes	N/A	N/A	CRT	Moved to Dollard-des-Ormeaux, Québec
PQ134267	Bureaux en gros 565 Boulevard Lebourgneuf, Québec, QC G2J 1R9,	Quebec	1/8/2017	Yes	N/A	N/A	Printer	Likely at ECycle Solutions in Salaberry-de-Valleyfield, Québec

Tracker Number	Deploy Site	Province	Deploy Date	Approved Depot	Approved Processor	Certified	Device Type	Last Reported Location
PQ140264	**Recycle Informatique 840 Rue Saint-Vallier O #104, Québec, QC G1N 1C9,**	**Quebec**	**1/8/2017**	**No**	**No**	**None**	**LCD**	**Exported to New Territories, Hong Kong**
PQ139274	Insertech 4820 Rue Molson, Montréal, QC H1Y 3J8	Quebec	1/8/2017	Yes	ERRP	None	CRT	Moved to Hamilton, Ontario
PQ139795	Suntech Recycle 642 Guimond, Longueuil, QC J4G 1P8	Quebec	1/8/2017	No	No	R2	LCD	Moved to Châteauguay, Québec
PQ135652	Valoritec 700 Boulevard Gréber, Gatineau, QC J8V 3P8	Quebec	31/7/2017	Yes	RQP 2010 RQP 2015	R2	Printer	Moved to Toronto, Ontario
PQ136213	**Evolu-TIC Outaouais 438 Rue Saint-Louis, Gatineau, QC J8P 8B3**	**Quebec**	**31/7/2017**	**Yes**	**RQP 2010 RQP 2015**	**R2**	**CRT**	**Moved to The International Metals Reclamation Company, Inc. in Ellwood City, PA, USA**
NS140496	Elmsdale Recycling 75 Park Rd, Elmsdale, NS B2S 2L3	Nova Scotia	02/8/2017	Yes	N/A	N/A	LCD	No movement

	Province	Approved Depot	Approved Processor	Certified	Device Type	Last Reported Location
TOTALS	Alberta (10) SK (1) NS (1) Manitoba (1) Ontario (13) Quebec (7) BC (10)	No (16) Yes (27)	N/A (14) No (15) Yes (14)	N/A (15) None (16) R2 (12)	LCD (19) Printer (14) CRT (10)	**-Exported (7)** -Moved to a Canadian Recycler (4) -Likely Moved to a Canadian Recycler (7) -Moved to Landfill (1) -No Movement (9) -Moved to Unknown Location (15)

Exported Trackers in Detail

1. ERA-Vancouver #1

Certification: None

Address of Deployment: 11280 Twigg Pl., Richmond, BC V6V 3C9, Canada

Website: https://www.electronicrecyclingassociation.ca/

Notes: ERA has a long history of exporting electronic waste (see special section). In this case, the printer delivered to ERA in the Vancouver area went to two different electronics junkyards in Hong Kong's New Territories. The first site had previously been visited by BAN (see photos). This site is larger than the norm in New Territories and involves numerous undocumented workers constantly breaking apart equipment. The second site in Ping Che is shown in satellite views below. We visited the second location in July of 2018, some months after the importation. The site had been cleaned out, and there was no evidence of electronics.

Legality: *Likely Illegal.* BAN made the printer non-functional and economically unrepairable. Canada is a Party to the Basel Convention as is China. Under the Basel Convention, Canada would likely consider the non-functional printer as a hazardous waste due to the presence of lead-tin soldered circuit boards and the possibility of selenium containing printer drums or inks containing flammable solvents.
As such, the Basel Convention applies, and thus any exports of hazardous waste would require notifications sent to Hong Kong by the Canadian government for this particular shipment, prior to exportation. Before export, Canada would first have to agree to the export, then they would have to notify Hong Kong to see if they agreed to the import. As Hong Kong has already implemented the Basel Ban Amendment (Decision III/1 of Basel), Canada would then know that China's consent would not be possible, as Canada is an Annex VII country and China is not. Under the Convention, Canada is obliged to respect the import bans of importing countries. Any exports/imports of hazardous waste moving to a country that has prohibited their import by a private party without government approval would be considered illegal traffic (Article 9 of Basel) and a criminal act. It is Canada's job to enforce this law.

First location where the ERA-Vancouver tracker ended up. When BAN visited in 2015 the site was mostly processing mercury bearing LCD screens, exposing workers to mercury inhalation and skin adsorption. Here one can see the stands from hundreds of imported LCDs. Copyright BAN, December 2015.

Tracker Number	Type of e-Waste	Date of Deployment	Date of Arrival	State/Province of Export	Destination Country	Chain of Export Summary
BC141049	Printer	March 22, 2017	May 23, 2017 June 26, 2017	British Columbia	Hong Kong	ERA 11280 Twigg Pl, Richmond, BC V6V 3C9 Yuen Long, New Territories, Hong Kong 22.45783, 114.01927 Ping Che, New Territories, Hong Kong, 22.52706, 114.16870

First location where the ERA-Vancouver tracker ended up. When BAN visited in 2015 the site was mostly processing mercury bearing LCD screens, exposing workers to mercury inhalation and skin adsorption. It is likely that the recent crackdown by the Environmental Protection Department of Hong Kong on mercury bearing LCD imports has now converted this site to working on printers. Copyright BAN, December 2015.

Drone shot showing the final location of where this tracker last pinged. This site had been drastically cleaned up and is likely a holding area for the e-waste before it is shipped elsewhere. Copyright BAN, July 2018.

2. ERA-Vancouver #2

Certification: None

Address of Deployment: 11280 Twigg Pl., Richmond, BC, V6V 3C9, Canada

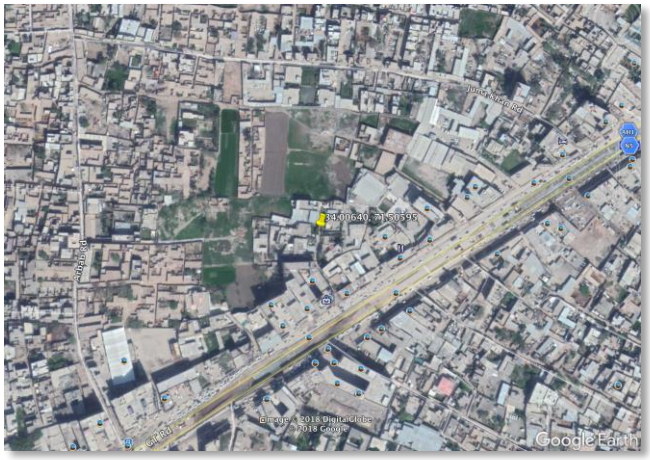
Website: https://www.electronicrecyclingassociation.ca/

Notes: ERA has a long history of exporting electronic waste (see special section on ERA). In this case and an LCD monitor delivered to their site in the Vancouver area went first to Calgary, Alberta -- likely ERA's site there and then onward to Pakistan. It would appear that an eastern seaboard port was used. Our volunteers in Pakistan have visited the site in Peshawar where the device ended up. The coordinates brought us to the Abbas Computer Market area. There, many LCD screens were found along with evidence of crude dismantling and dumping of residues. Most of the devices at the market appeared to have been imported with many asset tags from the US and from Canada found (see photos below).

Legality: *Likely Illegal.* Canada is a Party to the Basel Convention as is Pakistan. Under the Basel Convention, unless the equipment was tested and deemed fully functional, LCDs containing mercury backlights (CCFLs) such as this one are hazardous waste. BAN made the LCD device non-functional and economically unrepairable. As such, the Basel Convention applies, and thus any exports of hazardous waste would require Canada first to see if Pakistan forbids the importation of hazardous waste. As noted above, Pakistan has already notified the Basel Parties that they prohibit all imports of hazardous waste into Pakistan. Canada would be obliged therefore to forbid any exports to Pakistan by ERA or any other Canadian actor. Any exports/imports of hazardous waste moving to a country without notification and consent are to be considered illegal traffic (Article 9 of Basel) and a criminal act (Article 4, paragraph 3 of Basel). It is Canada's job to enforce this law.

Tracker Number	Type of e-Waste	Date of Deployment	Date of Arrival	State/Province of Export	Destination Country	Chain of Export Summary
BC135488	LCD	March 28, 2017		British Columbia	Pakistan	ERA 11280 Twigg Pl, Richmond, BC V6V 3C9
			Mar 31st, 2017			Calgary, Alberta
			Oct 3rd, 2017			Peshawar, Pakistan 34.00640, 71.50595

Closer view of ERA Vancouver export to Peshwar Pakistan. The red marker shows the entryway to the Abbas Computer Market. Google Earth 2018.



Long view of ERA Vancouver export to Peshwar Pakistan. Google Earth 2018.

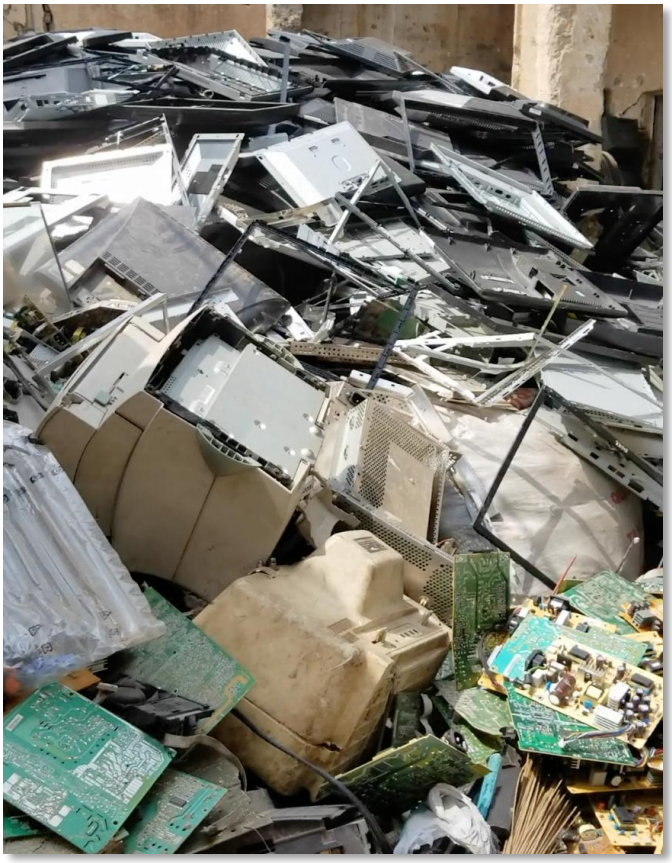
Entry to Abbas Computer Market, an electronics street market in Peshawar, Pakistan that receives large amounts of imported electronic scrap. Copyright BAN, Shakila Umair, 2018

Discarded CRT TV circuit boards in the Abbas Computer Market. Copyright BAN, Shakila Umair, 2018.

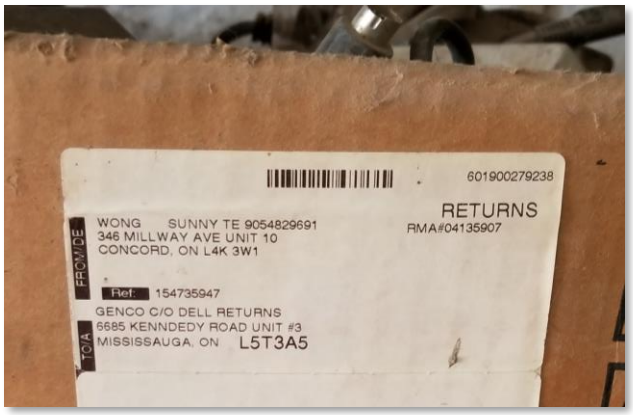
LCD screens with mercury-containing lamps at Abbas Computer Market. Copyright BAN, Shakila Umair, 2018.

Example of asset tag found at Abbas Computer Market showing the scrap was imported from North America -- the Fort Worth (Texas) independent School District in this case. Copyright BAN, Shakila Umair 2018.

An asset tag for a Seaton House computer monitor found exported to Peshawar, Pakistan. Seaton House is Toronto's largest homeless shelter. Copyright BAN, Shakila Umair, 2018.



CRT and LCD breakdown site in Peshawar. Contamination by mercury and CRT phosphors, and leaded glass appears as a likely result of this type of operation. Copyright BAN, Shakila Umair, 2018.



Gaylord labels indicating origins in Ontario, Canada, found in Abbas Electronics Market. Copyright BAN, Shakila Umair 2018.

Dumped and broken CRTs found in a Peshawar, Pakistan electronics market where Canadian exports were traced and found. Copyright BAN, Shakila Umair, 2018

3. Uniway (ERA drop site-Edmonton)

Certification: None

Address of Deployment: 6772 99th Street, Edmonton, AB, Canada (has since moved or has changed to an ERA branded location)

Website: https://www.electronicrecyclingassociation.ca/ del

Notes: ERA has numerous depots across Canada listed on their website. The Uniway Computers firm appears to serve as one of these in a joint agreement with ERA but since our delivery, this may no longer be the case. Once again, our tracking finds ERA exporting an LCD monitor -- this time to Hong Kong, via Brampton, Ontario. It would appear that an Eastern seaboard port was used. This Hong Kong end-point was visited by BAN in July of this year. There was one worker who refused to allow us to enter and claimed there was no e-waste there and nothing was for sale. When we said we could see the e-waste through the fence he said: "it's not for sale" and to "go away." However, by flying a drone over the site we clearly saw the e-waste in the small site (see photo below).

Legality: *Likely Illegal.* Canada is a Party to the Basel Convention as is China. Under the Basel Convention, unless the equipment was tested and deemed fully functional, LCDs containing mercury backlights (CCFLs) are hazardous waste. BAN made the LCD device non-functional and economically unrepairable.
As such, the Basel Convention applies, and thus any exports of hazardous waste would require notifications sent to Hong Kong by the Canadian government for this particular shipment, prior to it exportation. Before export, Canada would first have to agree to the export, then they would have to notify Hong Kong to see if they agree to the import. As Hong Kong has already implemented the Basel Ban Amendment (Decision III/1 of Basel), Canada knows that consent would not be possible, as Canada is an Annex VII country and China is not. Canada as a Basel Party is obliged to respect the import ban and not allow export. Any exports/imports of hazardous waste moving to a country that has prohibited their import by any actor such as ERA would be considered illegal traffic (Article 9 of Basel) and a criminal act. It is Canada's job to enforce this law.

Tracker Number	Type of e-Waste	Date of Deployment	Date of Arrival	State/Province of Export	Destination Country	Chain of Export Summary
AB135645	LCD	April 24, 2017		Alberta	Hong Kong	ERA-Uniway, 6772 99th Street, Edmonton, AB 53.504867, -113.487220
			Aug. 23, 2017			Brampton, Ontario
			Oct. 19, 2017			New Territories, Hong Kong
			Nov. 21, 2017			Kai Pak Ling Road, New Territories, Hong Kong 22.459197, 113.982764

Google Earth Street view shot down the alleyway. ERA truck and forklift can be seen. Google Earth.

Where the ERA-Uniway LCD screen ended up. Google Earth.

Drone shot of site where the ERA-Uniway LCD screen ended up. We were not able to get in to determine what kind of operations took place there. But it could well have been onward shipping e.g. to South Asia or Southeast Asia. Copyright BAN 2018.

4. CDI

Certification: None, however CDI is listed in the RQO government approved site list (see below)

Address of Deployment: 130 S. Town Centre Blvd, Markham, ON, Canada.

Website: http://www.cdicomputers.com/

Notes: In this case, a CRT was exported from Canada to the Lünen area of Germany. It is very likely that it was sent to the TSR Recycling GmbH & Co. KG's primary facility at Brunnenstraße 138, 44536 Lünen, Germany. Despite this export not being sent to a developing country, it is still likely to be illegal (see below).

Legality: *Possibly Illegal.* Canada and Germany are both Parties to a special accord allowed under the Basel Convention's Article 11. The OECD group of developed countries have developed an arrangement under which they can trade in recyclable wastes with somewhat less rigor than that normally applied under the Basel Convention. This OECD Amber-Green Council Decision as it is commonly referred, still requires that CRT containing equipment exported for recycling, must be first notified by the OECD exporting country to the importing OECD country and consent is expected from the OECD importing state. The question arises, did Canada notify Germany and did they receive consent, explicit or tacit in accordance with the agreement? CRTs are listed controlled wastes under both the Basel Convention and the OECD accord and thus unless they are tested and shown to be fully functional this would be a controlled hazardous waste. BAN made the CRT device non-functional and economically unrepairable. As such, the OECD agreement or the Basel Convention applies to this shipment. BAN has yet to see a shipment of electronic waste between North America and Europe that has properly applied the OECD Amber-Green Agreement. We, therefore believe it is very possible that this export did not undergo the required notification and consent procedure and if that were true would be illegal. The Canadian government can check this easily. It is Canada's job to enforce this law.

Tracker Number	Type of e-Waste	Date of Deployment	Date of Arrival	State/Province of Export	Destination	Chain of Export Summary
ON154407	CRT	July 19, 2017	July 25th, 2017 Sept. 21st, 2017	Ontario	Germany	CDI, 130 S Town Centre Blvd, Markham, ON Toronto, Ontario Dortmund, Lunen area Nordrhein-Westfalen, Germany

http://www.oecd.org/env/waste/decisionofthecouncilconcerningthecontroloftransboundarymovementsofwastesdestinedforrecoveryoperationsc2001107final.htm

RQO APPROVED RECYCLERS

The following organizations have successfully completed the assessment process and have been verified under the Recycler Qualification Program (RQP): (Recycling) and/or the Electronics Reuse and Refurbishing Program (ERRP): (Reuse).

Select province: Ontario

NAME	ADDRESS	CITY	PROVINCE / STATE	POSTAL CODE	WEBSITE	PROGRAM
ADL	500 Keele Street, Unit 205	Toronto	Ontario	M6N 3C9	www.adlprocess.com	RQP 2010
Artex	94 Brockport Drive	Toronto	Ontario	M9W 5C5	www.artexenvironmental.com	RQP 2010
CDI Computer Dealers Inc.	130 South Town Centre Blvd.	Markham	Ontario	L6G 1B8	cdicomputers.com	ERRP
Com2 (Mississauga)	6145 Ordan Drive	Mississauga	Ontario	L5T 2C9	www.Com2Recycling.com	RQP 2010 RQP 2015
eCycle (Mississauga)	7510 Bren Road	Mississauga	Ontario	L4T 4H1	www.ecyclesolutions.com	RQP 2010 RQP 2015 ERRP
FCM (Cornwall)	2900 Loyalist St	Cornwall	Ontario	K6H 6C8	fcmrecycling.com	RQP 2010 RQP 2015
GEEP (Barrie)	220 John St.	Barrie	Ontario	L4N 2L2	www.geepglobal.com	RQP 2010 RQP 2015
Greentec	95 Struck Court	Cambridge	Ontario	N1R 8L2	www.greentec.com	RQP 2010 ERRP
Revolution Recycling	700 Ormont Drive	North York	Ontario	M9L 2V4	www.revrecycling.com	ERRP
Shift Recycling	700 Ormont Dr.	North York	Ontario	M9L 2V4	shiftrecycling.com	RQP 2010 RQP 2015

5. Recycle Informatique

Certification: None

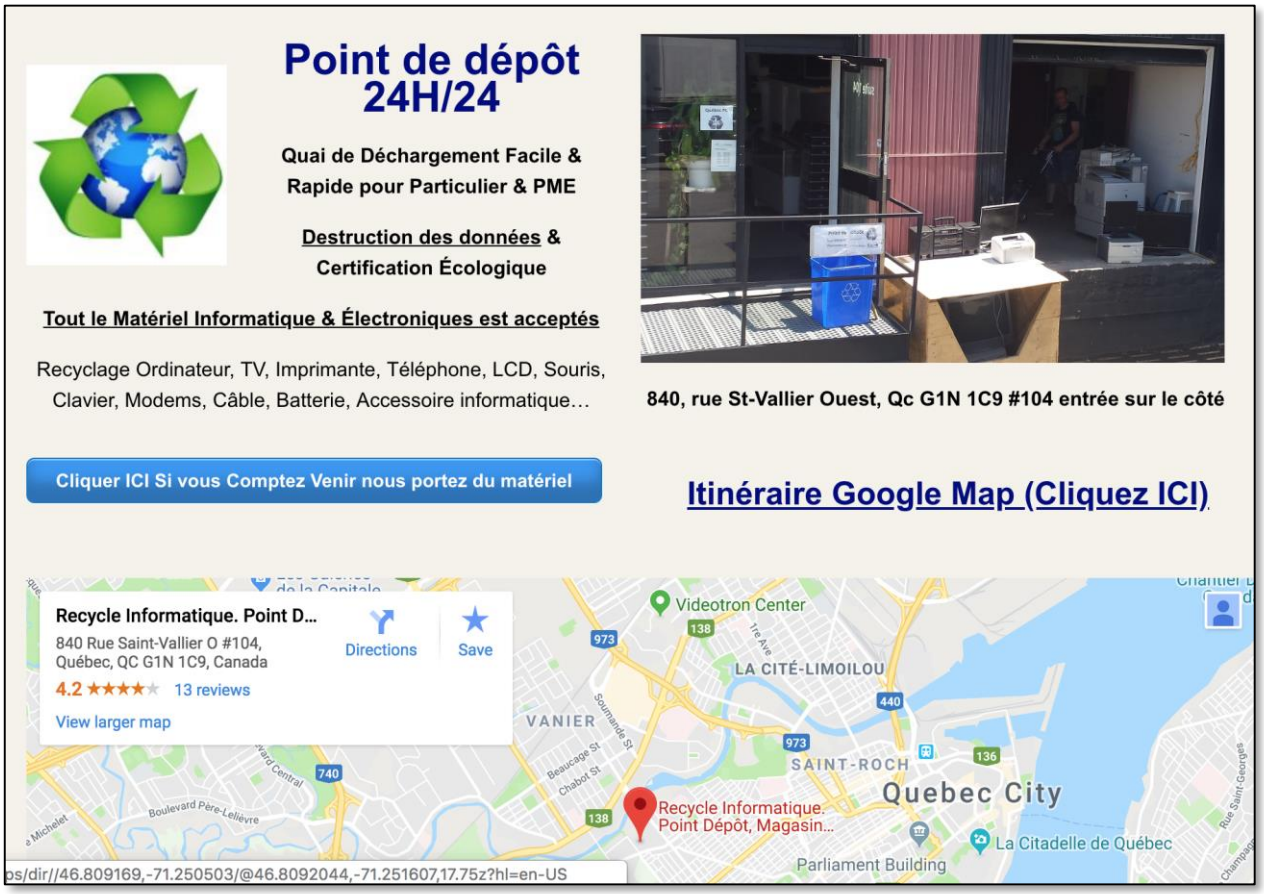
Address of Deployment: 840 Rue Saint-Vallier, O #104, Québec, QC, Canada

Website:
https://www.recycleinformatique.com/

Notes: The LCD dropped at the Quebec electronics recycler Recycle Informatique was exported from Canada to New Territories, Hong Kong. We only received one signal from Hong Kong and it was cell tower reading. For this reason, we could not visit the end-point.

Legality: *Likely Illegal.* Canada is a Party to the Basel Convention as is China. Under the Basel Convention, unless the equipment was tested and deemed fully functional, LCDs containing mercury backlights (CCFLs) are hazardous waste. BAN made the LCD device non-functional and economically unrepairable. As such, the Basel Convention applies and thus any exports of hazardous waste would require notifications sent to Hong Kong by the Canadian government for this particular shipment, prior to exportation. Before export, Canada would first have to agree to the export, and then they would have to notify Hong Kong to see if they agree to the import. As Hong Kong has already implemented the Basel Ban Amendment (Decision III/1 of Basel), Canada knows that consent would not be possible, as Canada is an Annex VII country and China is not. Canada is obliged to recognize and respect the import bans of importing countries. Any exports/imports of hazardous waste by a private party moving to a country that has prohibited their import would be considered illegal traffic (Article 9 of Basel) and a criminal act. It is Canada's job to enforce this law.

Tracker Number	Type of e-Waste	Date of Deployment	Date of Arrival	State/Province of Export	Destination Country	Chain of Export Summary
PQ140264	LCD	August 1, 2017	Oct. 11, 2017 May 8, 2018	Ontario	Hong Kong	Recycle Informatique 840 Rue Saint-Vallier O #104, Québec, QC Toronto, Ontario New Territories, Hong Kong



From the website of Recycle Informatique showing drop depot used by BAN, global recycling logo and citing a Certification Écologique of which there is no such thing.

6. Evolu-TIC Outaouais

Certification: R2

Address: 438 Rue Saint-Louis, Gatineau, QC J8P 8B3, Canada

Note: It appears this device was exported to INMETCO, a subsidiary of American Zinc Recycling (formerly Horsehead, Inc.) and a company specializing in nickel and zinc recovery, and the processing of Nickel-Cadmium batteries. They also collect and sort Lithium-ion batteries for the Call2Recycle industry consortium. It is not clear why INMETCO would be importing LCD monitors unless they have opened their doors to all manner of electronic waste for an additional source of revenue. Storage of such waste, particularly in the presence of lithium-ion batteries is a fire danger. The company experienced a major fire in 2015. The fire departments claimed that the black smoke was a result of the burning of plastic. There is a great deal of plastic in e-waste stocks.

Legality: *Possibly Illegal.* There is no doubt that the LCD monitor deployed at Evolu-TIC Outaouais was hazardous waste due to its lack of functionality and the presence of mercury. Canada and the US have entered into a joint agreement regarding transboundary movements of hazardous waste, which is recognized under the Basel Convention's Article 11 allowing trade between Parties and non-Parties (e.g., the USA). This bilateral agreement requires that the Canadian authorities would notify any shipment from Canada to the US to the US authorities before shipment. It is very doubtful that this took place. However, this can be affirmed by Environment Canada who would have been the competent authority making the notification. It is Canada's job to enforce this law.

Tracker Number	Type of e-Waste	Date of Deployment	Date of Arrival	Position, Chain of Export	Destination Country	Chain of Export Summary
PQ136213	LCD	July 31, 2017	Jan 22-27, 2017	First and Last	Ellwood City, Pennsylvania, United States	Evolu-TIC Outaouais 438 Rue Saint-Louis, Gatineau, QC J8P 8B3, Canada INMETCO (International Metals Reclamation Company, Inc.) 148 Arch Street, Ellwood City, Pennsylvania, United States 40.857882, -80.275870 GPS

US/Canadian agreement.

Aerial view of INMETCO, metals recycler in Ellwood City, PA. Is this site importing large quantities of e-waste? From American Zinc Recycling website.

Black smoke rising at INMETCO fire. Did this come from stockpiles of e-waste? Copyright Dawn Wehman for Calkins Media. 2015.

7. GEEP

Certification: R2

Address: 5505 72nd Ave SE unit 9, Calgary, AB, T2C 3C4, Canada

Notes: In this case, an LCD monitor was left at GEEPs Calgary facility. It was likely transported by truck and then by train to Chino, California but we saw no precise signals along the way. While it is possible that this shipment could have been accomplished legally, it does not appear likely. Beyond the fact that Chino is the home of several infamous e-waste exporters, the requirements of Environment Canada and the Alberta Recycling Management Authority are unlikely to have been followed (see below).

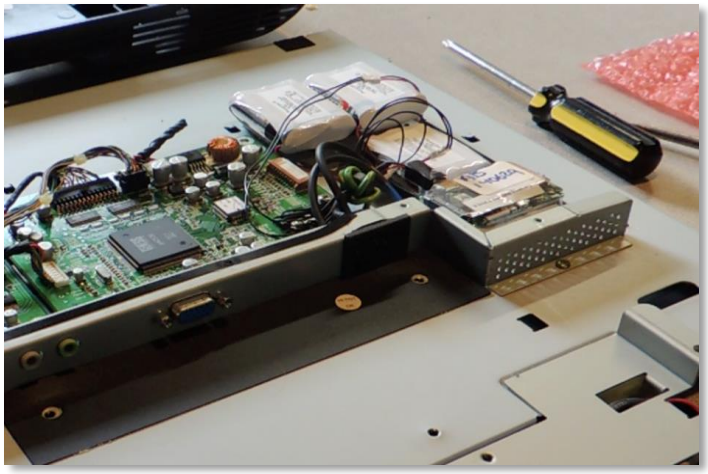
Legality: L*ikely Illegal.* There is little doubt that the LCD monitor deployed at GEEP was hazardous waste under the definitions of the Basel Convention and OECD agreements, due to its lack of functionality and the presence of mercury. In addition to its Basel Convention and OECD obligations, Canada has entered with US into a bilateral agreement regarding transboundary movements of hazardous waste. This agreement requires that any shipment of hazardous waste from Canada to the US must be notified by the Canadian authorities to the US authorities prior to shipment. However, even if Canada and the US did not agree that non-functional equipment containing mercury bearing lamps was a hazardous waste subject to strict control, there is another problem. GEEP is one of 7 approved processors in the Alberta provincial recycling program administered by the Alberta Recycling Management Authority (ARMA). ARMA has confirmed to us in writing that it does not allow whole units to be shipped from their processors anywhere, and they require hazardous materials like batteries to be removed before shipping to any downstream destinations such as the unknown company in Chino.

If the device were opened up to accomplish the removal of the batteries, it would first become very obvious to the operator that there is a tracker inside as there is a label on the tracker saying “if found contact inform@ban.org”. Second, it would be very obvious that there are battery packs that would need to be removed. However, it is a certainty that *if* the batteries were pulled out by hand or other means, that the tracker

tracking unit would cease to function there is no internal battery on the tracker circuit board, and thus the tracking unit would never have been able to signal to us from Chino, California. Indeed, the data we received indicated virtually no loss of battery power when it signaled from Chino. Further, the wires that connect the tracker to the three battery packs are very delicate and thus any effort to remove the batteries and tracker together while keeping it all functional, and then sending it all together intact to Chino would have been near impossible (even if the Chino facility was the end destination for batteries) which it likely is not. Thus, we can assess that the overwhelming likelihood is that this LCD unit was never opened at GEEP and was shipped whole to a Chino facility. Neither ARMA nor GEEP would reveal the name of the Chino area facility.

We believe therefore that it is likely that this export from Calgary to Chino represented either or both a violation of provincial rules enforceable by ARMA or a violation of the USA/Canada bilateral agreement. It is the job of ARMA to investigate and enforce the likely provincial rule violation and it is the job of the Basel Convention Competent Authority to investigate and enforce the bilateral agreement. In this latter case that authority is Environment Canada. We look forward to the results of the investigation.

Tracker Number	Type of e-Waste	Date of Deployment	Date of Arrival	Position, Chain of Export	Destination Country	Chain of Export Summary
AB240629	LCD	April 24, 2017	June 6, 2017	First and Last	Chino, California, United States	GEEP 5505 72nd Ave SE unit 9, Calgary, AB T2C 3C4, Canada Chino, California, United States



From installation video, showing tracker (with numbered tape on it) and 3 battery packs on right-hand side of opened LCD screen delivered to GEEP in Calgary. Alberta Authority requires batteries to be removed prior to onward shipping. Battery removal would have disabled tracker. It appears that this LCD monitor was shipped whole without being opened and hazardous substances removed as required. Copyright BAN 2017.

ERA: Canada's Prolific Exporter

Our study has identified one organization responsible for 75% of the tracked devices that moved from Canada to developing countries. This non-profit company, known as Electronic Recycling Association (ERA), bears some extra scrutiny as it has been in the forefront of our waste trade research for some time now.

For over ten years BAN has found ERA to be a constant and prolific Canadian exporter of electronic waste to developing countries from three different locations in the Vancouver, BC area. We have also discovered them selling equipment with residual corporate data on it to the public. Both of these types of activities are highly irresponsible and likely illegal. Over these years we have reported the exports to Canadian authorities. In 2013 we reported exports and data releases to the Vancouver Sun for a series of reports authored by Larry Pynn.

Continual Exports to Asia

Between the years 2009 and 2013, prior to conducting GPS tracking, BAN engaged in intermodal container tracking. This involved photographing containers in the yard of ERA and then utilizing online shipping company databases to anticipate the foreign port the e-waste container was destined. We would then alert the Basel Convention Competent Authorities (CAs) in the receiving countries. This type of tracking allowed us to know the ship, the port of entry and arrival time, but could not tell us precisely the contents of the containers or where the scrap ended up, or its environmental fate. Nevertheless, this method proved to be an effective way to garner evidence and provide Hong Kong authorities with the ability to open up the containers and determine if contraband was inside.

ERA also appeared to have used other companies to do a lot of its collection as well as exportation. They had a relationship with a former Vancouver e-waste recycler known as PC Max -- a company from which we had also documented significant exportation. While PC Max claimed that they merely operated as a drop-off site for ERA, BAN monitored several truck trailer loads of e-waste that went directly from ERA's facilities in Vancouver to PC Max's facility in Vancouver. We believed PC Max was another channel through which ERA exported large volumes of e-scrap to Asia.

ERA also operated, and we believe continues to operate, inside of the same warehouse as e-Tech Management -- another Canadian/US based company that has been a famous exporter for many years. The exact relationship between e-Tech and ERA is not known other than their co-location, and this took place -- at two different sites in the Vancouver area. Recently BAN and HK01 News in Hong Kong exposed e-Tech in a report,[7] regarding their North American exports to Hong Kong.

Below is a table of just the exports from ERA directly. We have similar data from Vancouver's e-Tech Management and PC-Max as well.

[7] http://wiki.ban.org/images/2/29/E-Tech_e-Waste_Mismanagement_at_EcoPark.pdf

ERA Vancouver Container Exports: Observed 2018-2013

Observed Date	Shipping Company Name	Container Info	Vessel / Route	Movement	Comments
2008-05-18	Maersk	ID: MSKU8761378 Owner: Maersk	CHARLOTTE MAERSK 0806 -> CAPE FLINT 0826	Departing from: Vancouver, Arrival date: 2008-06-29 Arriving to: Tanjung Pelepas, Johor (Malaysia)	Estimated Time of Arrival 26-Jun-08 Notified Competent Authority? Yes (MY) on June 9
2008-05-25	CMA CGM	ID: ECMU4344130 Owner: CMA-CGM	CSCL BRISBANE SG346W -> CMA CGM JAMAICA RE449W	Departing from: Vancouver, Arrival date: 2008-07-12 Arriving to: Hong Kong	Estimated Time of Arrival 7-Jul-08 Notified Competent Authority? Yes (SA) on June 9 THIS CONTAINER HAD CRTs ON SKIDS INSIDE.
2008-06-15	China Shipping	ID: CCLU4839664 Owner: China Shipping	CMA CGM YANTIAN SG354 W	Departing from: Vancouver, Arrival date: 2008-07-16 Arriving to: Nansha, Guangdong, China	Estimated Time of Arrival 16-Jul-08
2008-07-20	MAERSK	ID: TTNU9183955 Owner: TRITON	MAERSK DAMIETTA 0810	Departing from: Vancouver, Discharge Full Port Qasim Terminal, Port Qasim, Pakistan 08-Sep-2008	
2009-02-22	Evergreen	ID: EMCU9440348 Owner: Evergreen	GREET 0357-003W	Departing from: Vancouver, Arrival date: 2009-03-23 Arriving to: Qingdao, China	Reported to Environment Canada
2009-07-05	Maersk	ID: MSKU9517197 Owner: Maesk	NEDLLOYD AFRICA	Departing from: Vancouver, Arrival date: 2009-08-25 Arriving to: Pakistan	Pakistan government responded with some questions and a thank you. But failed to act as far as we know.

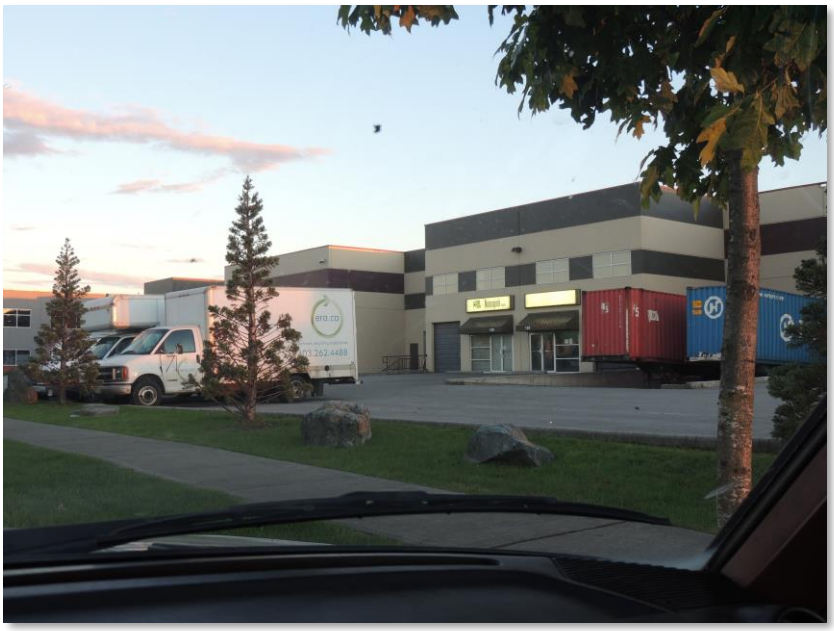
2009-08-12	Maersk	ID: PONU7360072 Owner: PO	NEDLLOYD AMERICA 0916	Departing from: Vancouver, Arrival date: 2009-11-03 Arriving to: Pakistan	
2009-08-21	Maersk	ID: GLDU7009612 Owner: GOLD	NEDLLOYD AMERICA 0916	Departing from: Vancouver, Arrival date: 2009-11-03 Arriving to: Pakistan	
2011-04-04	K-Line	ID: KKFU9053592 Owner: K-Line	GUANG DONG BRIDGE 035W	Departing from: Vancouver, Arrival date: 2011-05-13 Arriving to Hong Kong	Notified HK but message arrived May 18 saying CA was on holiday and missed it.
2011-05-01	CMA CGM	ID: TGHU8703096 Owner: TEX	MAERSK KARLSKRONA US368W	Departing from: Vancouver, Arrival date: 2011-05-30 Arriving to: Hong Kong	
2011-05-11	K-Line	ID: TGHU9071553 Owner: TEX	BREMAN BRIDGE 061W	Departing from: Vancouver, Arrival date: 2011-06-03 Arriving to: Hong Kong	
2011-05-17	PIL	ID: PCIU8417897 Owner: PIL	BERLIN EXPRESS QBX53W	Departing from: Vancouver, Arrival date: 2011-06-15 Arriving to: Hong Kong	
2011-05-22	CMA CGM	ID: TGHU9464524 Owner: TEX	CMA CGM CARMEN US380W	Departing from: Vancouver, Arrival date: 2011-06-21 Arriving to: China	

2011-05-29	PIL	ID: TCKU9830289 Owner: Triton	Hong Kong Express QHE55W	Departing from: Vancouver, Arrival date: 2011-06-29 Arriving to: Hong Kong	
2011-05-27	CMA CGM	ID: FSCU9648246 Owner: Florens	CMA CGM CARMEN US380W	Departing from: Vancouver, Arrival date: 2011-06-21 Arriving to: China	
2011-06-06	CMA CGM	ID: CMAU5272710 Owner: CMA CGM	CMA CGM TOSCA US388W	Departing from: Vancouver, Arrival date: 2011-07-04 Arriving to: Hong Kong	
2013-02-24	Hyundai	ID: HDMU2149119 Owner:	HYUNDAI CONFIDENCE 519W	Departure date:2013-03-06 Departing from: Vancouver, Arrival date: 2013-04-14 Arriving to: Karachi, Sindh, Pakistan	
TOTALS		**17 Containers**		**China: 4** **Hong Kong: 7** **Malaysia: 1** **Pakistan: 5**	

Container CCLU4839664 being loaded at ERA in Vancouver, July 2008. This container went to Nansha, Guangdong province China. Copyright BAN 2008.

Another container ECMU4344130 being loaded at ERA's #38 East 69th Avenue, Vancouver, BC location which contained CRTs, July 2008. This container went to Hong Kong. Copyright BAN 2008.

Container number KKFU7663153. Photographed at ERA's site at 455 Industrial Ave, Vancouver, BC August 2012. This container went to Hong Kong. Copyright BAN 2012.



Container number KKFU9071106 Photographed at ERA, #125 - 11280 Twiggs Place, Richmond, BC September 2013. This container went to Hong Kong. Copyright BAN 2013.

Data Insecurity

Additionally, as was reported to the Vancouver Sun, BAN purchased ten computers from ERA in 2009. On the hard drives of the computers, we found sensitive and private residual corporate data from companies such as Petro-Canada, Borden Chemical, and CP Rail, including payroll, oil drilling data, and personal SINs (Social Insurance Numbers). All of this was easily uncovered despite ERA's promise that donated computers are handled “safely and securely.”

A Non-profit?

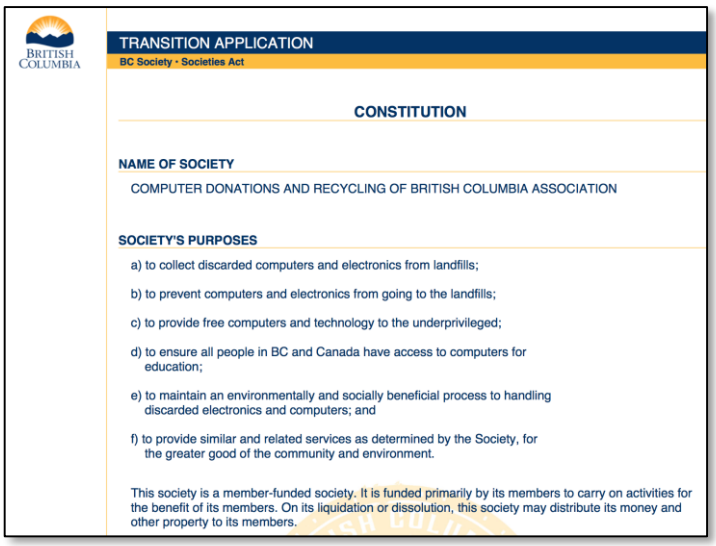
ERA is a registered non-profit society in the provinces of Alberta and British Colombia (doing business as Computer Donations and Recycling of British Columbia Association). The primary mission of these organizations is stated as repairing and reusing equipment to provide needy Canadian citizens with free or low-cost computers. According to their BC Society Registration's constitution they are meant to "be funded primarily by members." They are not meant to be primarily funded by the selling of many hundreds of tons of donated equipment to scrap brokers on the global waste market. However, from our estimation, this would appear to be a primary source of revenue for them over the years.

A Recycler?

On their website, ERA infers that they are recyclers and refurbishers. Indeed, it does appear that the company has been taking in many thousands of tons of electronic waste from the public and corporations for years. But there is less evidence that the scrap is actually refurbished and recycled by ERA.

They are not listed as designated official processors or collectors in any of the provincial government managed collection programs such as EPRA (10 Provinces) or ARMA (Alberta) Further, they do not, at least according to their website, operate under any certified environmental management system such as ISO14001, nor do they possess recycling or data security certifications (e.g. e-Stewards, R2, NAID) -- that are expected of responsible electronics recyclers.

On their website, there are many pictures but no photographs of onsite refurbishment or recycling taking place. Nor do they assert to the public on their website that they send all of their incoming scrap to other recyclers that are certified for recycling.



BRITISH COLUMBIA

TRANSITION APPLICATION

BC Society • Societies Act

CONSTITUTION

NAME OF SOCIETY

COMPUTER DONATIONS AND RECYCLING OF BRITISH COLUMBIA ASSOCIATION

SOCIETY'S PURPOSES

a) to collect discarded computers and electronics from landfills;

b) to prevent computers and electronics from going to the landfills;

c) to provide free computers and technology to the underprivileged;

d) to ensure all people in BC and Canada have access to computers for education;

e) to maintain an environmentally and socially beneficial process to handling discarded electronics and computers; and

f) to provide similar and related services as determined by the Society, for the greater good of the community and environment.

This society is a member-funded society. It is funded primarily by its members to carry on activities for the benefit of its members. On its liquidation or dissolution, this society may distribute its money and other property to its members.

From the Societies Act required Constitution of ERA's British Colombia operation.

Threats and Donations

We exposed the above information previously to the Vancouver Sun in 2013. The founder of ERA, Mr. Bojan Paduh, rather than explaining why he exports, how much and whether it can be done legally, threatened the Sun with lawsuits and likewise wrote BAN an angry, threatening letter (see below).

Prior to receiving this letter, Mr. Bojan Paduh had threatened BAN volunteers photographing his property and later sent people to confront and intimidate the volunteers with large dogs.

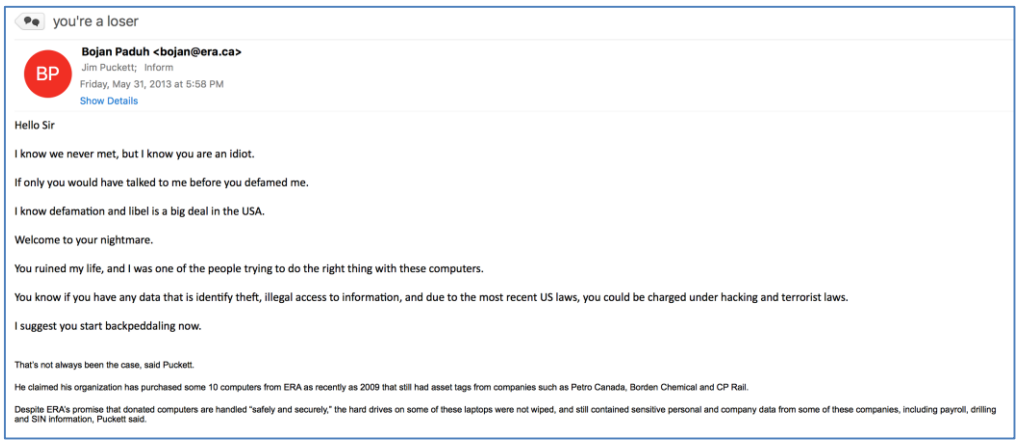
Later, when BAN refused to retract their statements or apologize for them, as was demanded by Mr Paduh, ERA sued BAN in a Calgary court for defamation, asking for a public apology and $25,000 Canadian. As a result, BAN was forced to prepare a defense to defend their free speech. About one year later, Mr. Paduh's lawyer phoned BAN and stated that ERA would be willing to settle and wondered what our terms would be. BAN stated that we stood by our past statements to the Vancouver Sun, so the only settlement we would accept would be that we issue no apology and they drop their lawsuit. The lawyer, after conferring, accepted this "settlement."

Most recently, Mr. Bojan Paduh was informed by the Canadian Broadcast Company (CBC) that BAN was about to release this latest report on our GPS tracking program and that it implicated them.

Since that time, we have noted that ERA has been busy issuing press releases establishing relationships with a new downstream recycler -- GreenTec, as well as High-Tech and they are re-asserting a partnership with Shell Canada. We note that Greentec does possess an R2 Certification-- High-Tech does not. The R2 Standard, however, is not compliant with the Basel Convention for exports of e-waste.

Additionally, without explanation, BAN received a donation of $100 U.S. dollars from Mr. Bojan Paduh.

So far, each time in the last decade BAN has endeavored to look into the Canadian e-waste export situation BAN continues to find and report that ERA is a company showing substantial evidence of likely illegal exportation. BAN's intent lies in our hope that we might see a business model from ERA that respects international law. And if not then we would like to see the laws of Canada and international law enforced. Will the Canadian authorities finally conduct an in-depth investigation into the activities of this organization? After all, illegal traffic under the Basel Convention is a criminal act which Parties have a legal duty to prosecute. Our GPS tracker evidence gives Canada a clear obligation to investigate.



you're a loser

BP

Bojan Paduh <bojan@era.ca>
Jim Puckett; Inform
Friday, May 31, 2013 at 5:58 PM
Show Details

Hello Sir

I know we never met, but I know you are an idiot.

If only you would have talked to me before you defamed me.

I know defamation and libel is a big deal in the USA.

Welcome to your nightmare.

You ruined my life, and I was one of the people trying to do the right thing with these computers.

You know if you have any data that is identify theft, illegal access to information, and due to the most recent US laws, you could be charged under hacking and terrorist laws.

I suggest you start backpeddaling now.

That's not always been the case, said Puckett.

He claimed his organization has purchased some 10 computers from ERA as recently as 2009 that still had asset tags from companies such as Petro Canada, Borden Chemical and CP Rail.

Despite ERA's promise that donated computers are handled "safely and securely," the hard drives on some of these laptops were not wiped, and still contained sensitive personal and company data from some of these companies, including payroll, drilling and SIN information, Puckett said.

Conclusion

While it would appear that the illegal or unsustainable export of e-waste from Canada is taking place at a rate (16%) less than that taking place in their neighbor to the South (34%), there appears to still be a level of export of hazardous electronic waste that warrants concern and governmental attention. After all, in the United States, such export is not illegal, and the government is not obliged to prosecute it from an environmental law standpoint. In Canada, however, such exports are likely to be criminal acts.

In this report, we have seen the reason for these laws in environmental terms. We have seen the sites in Hong Kong's New Territories and in Pakistan where the Canadian waste is broken down in harmful, polluting conditions, threatening the lives of workers and the health of communities. We have found multiple Canadian hazardous e-waste devices scattered around a marketplace in the middle of Pakistan, in operations that are crudely breaking down printers and mercury-laden LCD and lead-laden CRT monitors. And we are seeing this in a country that has banned all imports of hazardous waste. One of the devices found was from a well-known Toronto homeless shelter, Seaton House. And, we have found the leading exporter in this study, ERA, to be an organization that purports to be providing equipment for social good. Something is clearly wrong with this picture. Canada can do better.

Canadian manufacturers should immediately revise the Electronic Product Stewardship Canada's (EPSC) Electronic Recycling Standard (ERS). This standard, created by electronics manufacturers used to contain strong language forbidding the export of hazardous electronics products to developing countries. It no longer includes any language regarding compliance with the Basel Convention.

Instead it merely states that recyclers must adhere to the R2 standard and not the e-Stewards, or WEEELABEX or Cenelec standard. And yet the R2 Standard is the only one of the four global electronics recycling standards that does not forbid the export of e-waste to developing countries. R2 does not contain any reference to the Basel Convention and does not utilize Basel Convention definitions nor apply the Basel Convention obligations. Yet it is being used in Canada, -- one of the first countries of the world to become a Basel Convention Party.

EPSC responded to BAN recently on this matter by stating that the Basel Convention is the law and so it does not need to be in the standard. One would think that while this might be true three out of the four existing standards cited above make it very clear what the Basel Convention says, inside their standard. And, one would think that as there has been a long history of recyclers apparently not understanding the Basel Convention requirements enough to not repeatedly be found to be exporting hazardous electronic waste, that the EPSC would have considered it essential to have language in the ERS ensuring Basel compliance; *this can be resolved if the manufacturers believe it is important*.

Additionally, the Canadian government would be well advised to recommit themselves to the wishes of the international community and shed their unfortunate reputation of global dumper. This reputation was cemented in recent years following the debacle of the export of

hundreds of container loads of household garbage to the Philippines -- an egregious violation of Basel Convention obligations. They can do this by ratifying the Basel Ban Amendment -- a 1995 agreement to amend the Convention to forbid all exports of hazardous wastes, including electronic wastes from developed to developing countries. This agreement is supported by the vast majority of countries of the world and has already garnered 95 ratifications.

And, currently, the Amendment is on the cusp of finally entering into the force of international law. It needs but two more countries to ratify it. *Canada should be one of those countries.* It has the opportunity before it of becoming a last-minute hero to the developing world, and not be seen as a serial abuser.

Recommendations

1. Canada should move to ratify the Basel Ban Amendment as 95 countries and all of the EU countries have done.

2. Canadian authorities, police, and prosecutors must enforce the Basel Convention's export rules possibly with port inspections and by utilizing GPS trackers placed into wastes.

3. The Canadian Authorities must thoroughly investigate the business and environmental practices of the Electronic Recyclers Association (ERA)

4. Electronics recyclers in Canada are encouraged to consider becoming certified to the e-Stewards Standard as the only North American standard that audits and rewards companies for upholding the Basel Convention and the Ban Amendment.

5. Corporations and governments generating large amounts of electronic waste are encouraged to use GPS tracking (see www.eartheye.org) to ensure downstream vendors abide by international law.

6. Electronics manufacturers must insist that the organization they created in Canada to guarantee responsible e-waste management – EPSC, actually promotes a recycling standard that includes compliance with the Basel Convention and the Ban Amendment. R2 does not.

7. All countries in South Asia, South East Asia, including Hong Kong, and Pakistan should adopt the same import criteria for e-scrap as has been adopted in China's National Sword policy to create a level playing field and avoid becoming the target for unscrupulous waste traders and dirty industry migration.

9
ZPMC
8
SWL 80LT
SWL under Single Spreader 145,000lbs
SWL under Dual Spreaders 179,200lbs
SWL under Hook 165,000lbs
8
ZPMC
MAERSK
MAERSK SEALAND
MAERSK
MAERSK LINE
CAPITAL