Work Package 5: Crime Analysis

Deliverable 5.1

Definition of Organised Crime applied to WEEE

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EXECUTIVE SUMMARY

The main objective of Work Package 5 is to study the involvement of organised crime groups in the global distribution of WEEE, to identify the specific criminal activities associated with illegal WEEE shipments, and to provide an estimation of the volume of WEEE that is generated and illegally traded. Deliverable 5.1 is specifically looking at creating a crime typology. This includes developing a continuum of the various levels of compliance and violations of actors in the waste electrical and electronic equipment (WEEE) trade. In parallel, the report developed a continuum of criminal organisational structures, which details the characteristics, sub-structures, types of actors involved and how the description of their activity correlates to traditional definitions of organised crime or not. From preliminary analysis of the information collected, it is clear that violations and non-compliance in the WEEE trade is not unique to one particular type of actor. There is a degree of compliance and criminality that spans across a continuum ranging from minor unintentional violations to activity following a criminal business model.

The research activity was performed based on open source material and supplemented by analyses on criminal data handled solely by INTERPOL through its secure channels, as well as by the outcome of questionnaires and expert interviews carried out by the Consortium members. The results presented also take into account the output coming from work package 3 (Legal Framework) and work package 4 (Market Assessment). Importantly for the purpose of the project, this also includes alignment of definitions and terminology and typology descriptions of the market serving as the analysis framework for the various Work Packages and upcoming Deliverables.

In the course of examining the instances of criminality involved in the WEEE trade, there is considerable variation in the degree of criminality reflected by various levels of non-compliance with the relevant regulations. This varies from individual actors reflecting low level non-compliance through to overt deliberate criminal activity for the purpose of financial gain. In the extreme instances of criminal activity in the cases we examined, there are links with legitimate companies involved in some element of the WEEE supply chain, demonstrating how the legal and illegal markets for electronic waste are closely interwoven. The offenders involved are either company owners, company staff or individuals that cooperated with companies. The diverse nature and severity of the criminality seen in the WEEE trade depended on the country, as did the level of enforcement. Information gaps are identified in the information supplied but experts did note that as their expertise in enforcing illegal WEEE trade increases, so too will the information available for law enforcement analysis.

This report provides the initial examination of the nature of the illegal WEEE trade which will be further expanded on through the progression of the criminal analysis work package. The continuum and the codification of the typologies will be further developed in the later deliverables of 5.3 and 5.5. Further details of case studies, offenders and specific modi operandi will be reported in Deliverable 5.3 which is a restricted release document.
1 INTRODUCTION

The criminal analysis deliverable 5.1 is articulated as follows:

- Section 2 will outline the information collection methods adopted in the study presented here. The multiple sources used to collect information will be described and mapped to the different types of issues this deliverable is intended to address. Various collection methods (questionnaires, expert interviews, academic research and exploitation of existing law enforcement data held by the INTERPOL General Secretariat) will be presented and the rationale behind the choice of method will be discussed. This section will also introduce the reader to the terminology utilised throughout the report as defined by work package 4.

- Section 3 will present a literature review focused on existing (published) research regarding the illegal trade of WEEE. The discussion will examine key issues such as the peculiarities of the phenomenon as an emerging form of transnational crime, its geographical distribution and the specific nature of the actors involved. The purpose is to provide an overview of the main trends as well as the modi operandi characterising the illegal trade of WEEE;

- Section 4 will outline the elements of actors, activities and violations across a preliminary compliance continuum which correlates the activities of actors across various levels of compliance in relation to WEEE.

- Section 5 provides an overview of the definitions of organised crime and theory of organised crime models. In parallel to the compliance continuum outlined in section 4, this section will outline the characteristics of criminal organisation structures and how these correlate to the existing definitions of organised crime.

- Section 6 will describe the main traits that seem to be common across actors and organisations involved in WEEE illicit trade (modi operandi, routes and transport modes, typologies of actors involved, etc.) as well as the most common strategies employed by European law enforcement agencies for addressing such crime types. This section will provide the preliminary crime typology related to WEEE illicit trafficking activities that will be further described in the matrix of deliverable 5.3 and criminal analysis of 5.5;

- Section 7 will combine the work of section 5 on organised crime theories and definitions with the typologies and traits outlined in section 6 to discuss organisational structures in the global distribution of WEEE, drawing on case information to discuss the presence of organised crime in WEEE.

- Section 8 will conclude with a preliminary synopsis of the findings of the criminal analysis work package completed to date.

The work described herein will be integrated into Deliverable D5.3, focused on the building of an evaluation matrix template for codifying the crime types associated with WEEE illicit trade. The contents reported in D5.1 will also serve as additional input for D5.2.
Figure 1: Correlation between work package 5 and the other work packages

2 COLLECTION OF INFORMATION

2.1 Terminology

A key element in outlining the crime typology is to clearly define and classify different actors and activities and also to ensure alignment with the analysis of the corresponding work packages. The following terms are used throughout this paper and also other work packages with the applied meaning:

**Formal (or legal) WEEE actors** are WEEE actors that are registered, and supposedly act and report in accordance with relevant regulations to governmental bodies at national, regional or local levels. They are typically licensed to collect, prepare for reuse, treat or trade WEEE (derived fractions).

**Reported activities and amounts** are those related to WEEE activities like the collected and treated amounts, or the recycling and reuse percentages declared to the compliance schemes, producers and authorities assigned for realising WEEE compliance in countries. These end up in national or regional totals.

**WEEE activities** include the collection, transport, export/transit/import, preparation for reuse (refurbishment, remanufacturing, reconditioning,…), trading, processing and recycling of WEEE (derived fractions) by either formal or informal actors.

The term **crime** is defined as: ‘an action or omission which constitutes an offence and is punishable by law’.

The term **illegal** is defined as: ‘contrary to or forbidden by law, especially criminal law’.

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The term *illicit* is defined as: ‘forbidden by law, rules, or custom’.\(^3\)

**Regulatory violations in WEEE** covers all criminal and civil/administrative violations which may take place in the context of WEEE-chains.

The term *violate* is defined as to: ‘break or fail to comply with (a rule or formal agreement)’.\(^4\)

The term *offence* is defined as: ‘a breach of a law or rule; an illegal act’.\(^5\)

The difference between a *civil offence* and *criminal offence* depends on the nature of the offence and the punishment assessed. A *civil offence* involves violations of administrative matters and there is no violation of a criminal statute. A *criminal offence* arises from the violation of local ordinances or state or federal statues prohibiting certain conduct.\(^6\)

**Informal WEEE actors** are (groups of) individuals, typically micro-entrepreneurs, who are, in contrast to formal actors, not registered as a business, have no license and/or do not report in accordance with relevant regulations. They generally operate with little regard to environmental health and safety conditions and have little or no mechanism in place to improve operations. Examples of informal activities are: Cherry picking valuable waste fractions and dumping the non-valuable fractions, processing by (groups of) individuals of WEEE in violation of applicable non-legislative standards or processing WEEE as general metal scrap in jurisdictions where no legislation is in place.

Informal actors can generate both legal output (collection service, refurbished goods) and illegal output (polluting recovery operations, smuggling). Informal WEEE actors can therefore simultaneously be involved in legal, sub-standard and illegal activities.

**Illegal WEEE activities** include the collection, transport, preparation for reuse, trading, processing and recycling of WEEE in violation of existing national (WEEE) legislation or international legislation (Basel) and/or enabling other concurrent or simultaneous illegal activities like identity theft or whitewashing under the disguise of a legal e-waste business.

**Organised crime**: As there are both many national and international definitions of the term organised crime, the meaning of this term will be discussed in Section 3.

**Informal (criminal) networks**: In this context an informal network refers to a network that is self-made amongst its members, it arises naturally, while formal networks (groups) form at upper levels and communicate from the top down.

**Law enforcement** in the context of this report refers to agencies playing any role in enforcement of WEEE related regulations and includes customs administrations, environmental inspection agencies and national police agencies.

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2.2 Method

The criminal analysis deliverable 5.1 Definition of organised crime applied to WEEE (hereby referred to as D5.1) is primarily intended to form a meaningful document for all parties involved in enforcement if regulations in the WEEE trade. The description provided for the deliverable 5.1 is as follows:

*Definition of organised crime applied to WEEE: D5.1 will create a crime typology using open source material, supplemented by analysis from criminal data handled solely by INTERPOL through its secure channels. This report will examine what activities are considered criminal in the current legislative framework (as informed by WP3, Legal Framework) and to what degree these activities are organised.*

In order to address this deliverable and the broader long-term outputs of the criminal analysis work package, an information collection plan was developed defining the different elements of the deliverable and identifying the approach needed to analyse the problem as well as the sources of information that could be used to address these questions. The following elements were identified as being essential to understanding the criminal activity occurring in the context of WEEE in conjunction with, yet prior to, determining if in fact the criminal activity was considered to be organised crime:

- Who are the actors involved in the illegal WEEE trade
- The *modi operandi* of the illegal WEEE trade
- Description of the supply chain of WEEE and the commodities
- What activities are considered violations
- The structure and nature of the activity
- Organised crime modelling

Data for D5.1 was collected predominately through four methods – questionnaires, expert interviews, academic research and exploitation of existing law enforcement data held by the INTERPOL General Secretariat. Open sources were also used to identify cases of relevance.

Two different questionnaires were developed to capture information on criminality linked to the illegal trade in WEEE. These questionnaires were distributed to 91 countries through INTERPOL’s network of National Central Bureaus (NCBs). A list of the countries requested to provide information can be found in Annex A. Countries were chosen based on information that indicated they were a stakeholder in international waste trade as either a source, transit or destination country. Countries that were not directly requested to provide information were determined based on an assessment of their capacity to respond to a detailed questionnaire of this nature or because their size or geographic location would make them unlikely to be a significant stakeholder in the illegal electronic waste trade. Source countries outside the European Union, such as the United States and Australia, were also approached in order to provide information on other illegal WEEE streams to compare with the EU situation. The NCBs then distributed these questionnaires to the relevant national agencies, including police, customs, environmental inspectorates and ministries of environment in their jurisdictions. The World Customs Organization was also engaged with on the project and encouraged their member administrations to supply information to our collection efforts. Of the two questionnaires distributed, fourteen countries from their police, customs, environmental authorities or ministries provided information in the form of questionnaire or comparable reporting. There were also six countries that responded that they were unable to provide data as their authorities did not collect information on this topic.

2.2.1 Questionnaire A

Questionnaire A was designed to capture information on specific case studies of criminality related to WEEE and requested law enforcement data related to the actors, *modi operandi*, commodities,
violations, enforcement response and dual criminality of past cases or detections of illegal WEEE trade. This questionnaire was restricted to the law enforcement sector and also requested nominal data on identified offenders. Countries were requested to provide details of a minimum of three cases to offer a variety of modi operandi identified in their jurisdiction. This questionnaire was designed to collect information to support D5.1 and the other criminal analysis deliverables, specifically D5.3. There were 25 case studies from 14 countries collected via this method. Of those 25, five case studies could not be included in the analysis as they provided insufficient information to conduct a basic analysis of the case or the commodity identified in the case was not WEEE.

Due to the complex and growing international phenomenon of illegal WEEE, and the strive for a deeper contextual understanding, the case study method was selected as the core research approach for the CWIT project deliverables. Academic research conducted by R. Yin suggests that a case study is an appropriated strategy when investigating "contemporary phenomenon in depth and with its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." The pragmatic case study approach helps to build rich, insightful case descriptions that underpin convincing interpretations, conclusions, and recommendations. Figure 2 provides a visual overview of the case study protocol developed by the work package 5 team outlining the elements required to use case studies for analysis of this nature.

Figure 2: Overview of the six-step case study protocol.

2.2.2 Questionnaire B

Questionnaire B was designed to capture information on the broader illegal WEEE trade in countries beyond individual case studies. The questionnaire sought information on court decisions on illegal trade in waste and WEEE; the penalties applied to these court decisions; modes of transport used for waste movements; criteria for distinguishing between EEE and WEEE; total volumes of legally and

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7 Deliverable 5.3 involves the development of a matrix that maps the crime types associated with the illegal trade and disposal of WEEE and the criminal activity that supports those crime types including routes and destinations.

illegally imported and exported waste; common *modi operandi* for how WEEE enters or exits their country; the category of actor (non-nominal) involved in the illegal WEEE trade and best practice in terms of detection and enforcement in their countries. This questionnaire was designed to collect information to support D5.1 and the other criminal analysis deliverables, specifically D5.2, D5.4 and D5.5. There were thirteen countries that supplied information for this particular questionnaire. There was some overlap with the countries that provided case study information via Questionnaire A.

2.2.3 Additional Information Sources

In addition to the questionnaires, experts in the field of enforcement were identified and interviewed. These experts are individuals who deal with the suppression, detection or investigation of illegal trade in WEEE within their respective national agencies. As with the questionnaires, these experts were asked to describe general trends in WEEE trade and prosecution that they have observed, as well as to elaborate on specific cases. Industry experts were also interviewed to share their experience with illegality in WEEE-related activities. In total, 10 interviews were conducted.

Academic publications were also used to identify previous research into illicit supply chains, modelling of organised crime and assessments into the scale and extent of illegal WEEE trade based on open source research. This research was also used to inform the conference paper *A New Research Protocol to Develop Multiple Case Studies on Illicit Activities in Trade, Logistics, Processing and Disposal of WEEE – Waste in Electrical and Electronic Equipment*, presented at the Hamburg International Conference of Logistics.12

In addition to case studies identified by countries and supplied via Questionnaire A, open source research was also conducted to identify cases that had been reported in the media, and follow up was made with the relevant authorities to obtain further official details of the case. This method identified significant cases which were included in the analysis of D5.1.

The INTERPOL General Secretariat has been involved in assisting INTERPOL member countries on the issue of illegal waste trade and pollution crime since 2006 when the first report was published - *INTERPOL Pollution Crime Working Group: Assessing the Links between Organized Crime and Pollution Crimes*. While law enforcement data cannot explicitly be used in this report, analysis of existing information, data holdings and results of law enforcement operations were analysed to provide a baseline of the information known to agencies on this topic. This information includes results generated from the 2012 *Operation Enigma* which targeted the illegal trade of WEEE in conjunction with seven European and African countries (United Kingdom, Germany, Belgium and the Netherlands, Guinea, Nigeria and Ghana). In addition, unrestricted reports such as the INTERPOL Phase II Report for the INTERPOL Pollution Crime Working Group *Electronic Waste and Organized Crime: Assessing the Links* were used to inform analysis of the scale and extent of criminality involved in the WEEE trade.

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9 Deliverable 5.2 will estimate the amount of WEEE generated from D4.2 and compare it to recorded volumes of legally recycled and recovered material. This will be compared against law enforcement stakeholder data concerning intercepted and/or estimated illegal transfer of WEEE for disposal.

10 Deliverable 5.4 will provide an understanding of law enforcement compliance gaps, such as gaps in capacity, knowledge and training, as well as jurisdictional loopholes along the supply chain. Will describe the areas of weakness in law enforcement and compliance regarding WEEE issues, potentially highlighting routes and concealment methods for criminals.

11 Analysis of criminal activities and crime types associated with illegal WEEE trading. D5.5 will synthesize and analyse the data from the first four deliverables (and previous work packages) in order to create a comprehensive overview of the current state and modus operandi of actors involved in illegal trading in WEEE.

3 LITERATURE REVIEW

The previous academic research on the actors, modi operandi and enabling factors of the illegal WEEE trade is used as a foundation for starting the research and analysis. Information collected by INTERPOL during the course of operations such as Operation Enigma assists in beginning to understand the scale of the WEEE problem. During Operation Enigma, which ran over two months in 2012, more than 240 tonnes of WEEE was seized. Over 40 companies and their managers, from different countries, were identified and investigated for their involvement in various stages of this criminal activity, including the collection, recycling, export, import and shipment of WEEE. Almost one third of the checks conducted during Operation Enigma in major ports resulted in the discovery of illegal WEEE. Coordinated actions between the participant countries were taken during the operation. For instance, Belgian Authorities repatriated approximately 100 tonnes of illegal WEEE to the Netherlands, where it was investigated by the Intelligence and Investigation Service of the Human Environment and Transport Inspectorate (ILT-IOD), in cooperation with the Dutch Police and the Public Prosecutors Office. Similar actions were undertaken by environmental authorities in West African countries such as the National Environmental Standards and Regulations Enforcement Agency of Nigeria (NESREA).

In spite of the work done by organisations such as INTERPOL, EUROPOL and the EU Network for the Implementation and Enforcement of Environmental Law (IMPEL) and national agencies, illegal WEEE trade is a relatively new crime type that still does not have the in-depth law enforcement expert knowledge as the more traditional transnational crimes. As with most non-ideological crime types, financial gain is the major driver for the illegal e-waste trade. Academics have described the negative value of waste as being a key element in why this otherwise legitimate trade and industry incentivises stakeholders to seek illegal avenues to deal with their waste. Rather than a commodity being exchanged for money like in any traditional transaction, in the case of waste, a producer provides the waste to the recycler and can potentially be charged for this service depending on the location. Cases identified in the United Kingdom have shown double financial incentives. This means licensed and authorized collectors of WEEE are contracted via service level agreements from municipal sites to collect and treat the WEEE and are paid for this service. By then illegally exporting the goods to, in this case, West Africa, the offender is paid to acquire the WEEE and then makes the profit by exporting to buyers overseas.

While the push factors for the illegal electronic waste trade are evident, destination countries and the pull factors are also considerable drivers in the illegal electronic waste trade. The need for metals to be used in manufacturing in Asia, China specifically, has contributed to China being one of the primary destination countries for electronic waste, despite the ban on import of used electronic and electrical equipment since 2000. Most of the waste is reportedly destined for informal recycling sectors, e.g. in the province of Guangdong. The demand in this sector exists particularly for cathode ray tube monitors and printed circuit boards. The United Nations Office for Drugs and Crime (UNODC) estimated that 80% of e-waste generated globally is shipped to Asia – with 90% of that amount destined for China. West Africa is becoming an increasingly popular destination among illegal exporters from the EU, meaning that the reported figure of 80% of electronic waste going to

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13 Details of violations and inspections carried out during IMPEL operations can be found in Section 6 of this report
15 Regina v Joseph Benson Indictment: T20132215.
Asia\textsuperscript{18} may need to be revised to account for this trend. The volumes of legal WEEE movements globally will be further assessed in subsequent deliverables by work package 4 at a later date.

The main sources of e-waste reaching China are the European Union, Japan and the United States. Such shipments are in breach of the law in the countries of export as well as in China.\textsuperscript{19} During expert interviews, participating countries identified two very distinct waste streams with China being the preliminary destination country for dismantled IT equipment with recycling value.\textsuperscript{20} Notwithstanding developments in China to establish recycling facilities to manage this equipment, the situation indicates that the vast majority of e-waste will continue being recycled in informal sectors for many years to come.\textsuperscript{21}

The legitimate market of used electronic equipment also acts as a pull factor and complicates enforcement against the illegal trade where the “digital divide” is bridged between developed and developing countries.\textsuperscript{22} The shortage of accurate data on used electronic and electrical equipment entering Africa is made more difficult as the distinction between used electronic and electrical equipment and waste electrical equipment is not made until after the goods arrive in the country and are dispersed. A 2009 study of the e-waste problem in Ghana estimated that around 30\% of the used electrical and electronic equipment imported was determined to be non-functioning and should have been classified as electronic waste - half of this amount was repaired locally and sold to consumers and the other half was irreparable.\textsuperscript{23} The estimate of 30\% being determined as non-functioning could be considered a conservative one. As CWIT Work Package 4 noted in its Deliverable 4.1, one of the areas requiring clarity in the WEEE stream is the distinction between waste and non-waste when it comes to shipment of used electronic products arising from collection, or after being discarded by the user, household or business. The shipment of new products or waste is clear, and defined by actual legislation, including the Waste Shipment Regulation\textsuperscript{24}.

The legal definition of waste is clear in the legal text of:

- The Basel Convention and of Waste (art. 2.1): Wastes are substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law;
- Waste Framework Directive (art. 3.1): Waste means any substance or object which the holder discards or intends or is required to discard.

The distinction between what is waste and non-waste when referring to exportation of used products leads to activities by exporters to use this ‘loophole’ to avoid enforcement action by attempting to exploit the uncertainty in the definition. By declaring the products as ‘used goods’ instead of waste despite the absence of the necessary testing to ensure re-use potential and functionality, the “holder”\textsuperscript{25} of the products and the “notifier”\textsuperscript{26} are attempting to avoid their obligations under the applicable legislation and regulations. In the instance of a case prosecuted in

\textsuperscript{19} Schluep, M. (2012:105). Cit. ibid
\textsuperscript{20} Interview, INTERPOL and enforcement expert.
\textsuperscript{25} “Holder” is defined by article 2(10) Waste Shipment Regulation as the producer of the waste or the natural or legal person who is in possession of it. The same definition as the Waste Framework Directive.
\textsuperscript{26} The “notifier” of a shipment is defined in Article 2(15) Waste Shipment Regulation as the “natural or legal person...who intends to carry out a shipment of waste or intends to have a shipment of waste carried out and to whom the duty to notify is assigned.”
Identifying the actors involved in the illegal electronic waste trade, and their relationships to the legal waste trade as well as to each other, is impeded by the confusion created by legitimate traders involved in illicit activity. According to a EUropol report, Organized Crime Groups (OCGs) are normally well-equipped to control the entire chain of waste processing activities, starting from pick up to transportation and the final disposal of waste.28 A study by the G8 Roma/Lyon Group in 2013 analysed the nature of the threat of global hazardous waste trafficking. The G8 assessment reported that some member countries identified OCGs as being active in waste trafficking. Using the Palermo Convention29 as their framework for identifying organised crime, Italy, Japan and the United Kingdom, at that time, cited organised crime as being at least ‘part’ of their illegal waste trade problems, but could not state that illegal waste was predominately conducted by organised crime. According to the report, quite often OCGs have a facilitating role in the trafficking of e-waste. They tend to make use of seemingly legitimate companies to mask their identities in this criminal activity. These companies are able to offer much lower prices to the consumers due to their non-compliance with safety and environmental regulations. Falsification of documents is a common method employed to conceal the origin and actual composition of the material.30 Information obtained through expert interview with representatives from law enforcement agencies stated that the generation of functionality certificates from electronic ‘experts’ was often fabricated and produced by associates of the exporter.31 E-waste is often shipped to Africa and Asia under the guise of second-hand computer or other mechanical parts. Illegal e-waste traders frequently exploit the services of specialists and experts with seasoned experience and technical knowledge of regulatory loopholes and disposal of trafficked e-waste. They are typically based in the countries of origin with strong networks in the destination countries. Information from expert interviews supports this with countries reporting that in some instances nationals of West African countries would arrange an illicit WEEE shipment and then leave Europe prior to or soon after its export. It was clear through the process of expert interviews that it was believed that many of the illicit WEEE exporters were known to each other and would use the services of each other when required; however, the criminal network was more of an informal nature rather than a traditional organised crime group. The features of these informal criminal networks is discussed later in this report.

In addition to organised crime, opportunistic crime or crime that is committed out of ignorance of the controls was also reported.32 Previous work by INTERPOL has identified that crime involving electronic waste tends to be less formal or structured than the traditional hierarchical organised crime structure. Small groups of traders and brokers are those often identified in the illicit activity. This may be because their activities are less sophisticated than large-scale commercial traders and therefore more likely to be detected by law enforcement. Alternatively, the professional traders do


31 Details of interview held within the confines of law enforcement

not want the reputational risk associated with the illicit activity. During expert interviews, it was identified by one country that only a small amount of WEEE is bought by exporters from legitimate WEEE processors. While this occurrence used to be more prominent, growing law enforcement oversight on this issue has brought these processors into compliance, making the reputational risk of being associated with illegal exports too high.

Identifying points in the electronic waste supply chain which are vulnerable to criminal exploitation requires a thorough understanding of the actors, their relationships and the systems and methods in place for waste transport across all the countries involved in the supply chain. Only then can relevant opportunities for law enforcement intervention be identified in the supply chain to interdict the actors involved in the illicit activities. Understanding the criminality associated with the electronic waste stream requires an empirical approach; however, the limited information available on this crime type from official sources makes this increasingly more difficult and identifies significant information gaps. The research that has been undertaken so far can provide a basis for identifying trends and *modi operandi* that can be further supported through law enforcement data on the illicit cases.

While not solely focused on electronic waste the IMPEL – TFS Enforcement Actions III Project reported the following inspections and violation rate across waste streams which highlights both the scale of the problem of non-compliant waste movements and also the enforcement efforts to address this issue.

**Table 1: Reported number of transport inspections and violation rate (Overall) Combined Years 1 and 2 Inspection Results**

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<tr>
<th>Participant</th>
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<th>Physical</th>
<th>Waste Inspections</th>
<th>Waste Inspections (%)</th>
<th>Violations</th>
<th>Violations (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>1045</td>
<td>1553</td>
<td>350</td>
<td>22.54%</td>
<td>30</td>
<td>8.6%</td>
</tr>
<tr>
<td>Belgium</td>
<td>15</td>
<td>143</td>
<td>112</td>
<td>78.32%</td>
<td>56</td>
<td>50.0%</td>
</tr>
<tr>
<td>Croatia</td>
<td>0</td>
<td>13</td>
<td>13</td>
<td>100.00%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cyprus</td>
<td>0</td>
<td>219</td>
<td>11</td>
<td>5.02%</td>
<td>4</td>
<td>36.4%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>808</td>
<td>895</td>
<td>22</td>
<td>2.46%</td>
<td>5</td>
<td>22.7%</td>
</tr>
<tr>
<td>Denmark</td>
<td>289</td>
<td>406</td>
<td>329</td>
<td>81.03%</td>
<td>60</td>
<td>18.2%</td>
</tr>
<tr>
<td>Estonia</td>
<td>1</td>
<td>62</td>
<td>4</td>
<td>6.45%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Finland</td>
<td>101</td>
<td>35</td>
<td>5</td>
<td>14.29%</td>
<td>1</td>
<td>20.0%</td>
</tr>
<tr>
<td>France</td>
<td>7</td>
<td>20</td>
<td>16</td>
<td>80.00%</td>
<td>15</td>
<td>93.8%</td>
</tr>
<tr>
<td>Germany</td>
<td>439</td>
<td>1299</td>
<td>315</td>
<td>24.25%</td>
<td>112</td>
<td>35.6%</td>
</tr>
<tr>
<td>Ireland</td>
<td>186</td>
<td>207</td>
<td>227</td>
<td>100%</td>
<td>38</td>
<td>16.7%</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>0</td>
<td>82</td>
<td>57</td>
<td>69.51%</td>
<td>14</td>
<td>24.6%</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>36</td>
<td>458</td>
<td>258</td>
<td>56.33%</td>
<td>76</td>
<td>29.5%</td>
</tr>
<tr>
<td>Norway</td>
<td>377</td>
<td>109</td>
<td>377</td>
<td>100.00%</td>
<td>323</td>
<td>85.7%</td>
</tr>
<tr>
<td>Poland</td>
<td>7652</td>
<td>1936</td>
<td>393</td>
<td>20.30%</td>
<td>19</td>
<td>4.8%</td>
</tr>
<tr>
<td>Portugal (with Spain)</td>
<td>433</td>
<td>1880</td>
<td>180</td>
<td>9.57%</td>
<td>19</td>
<td>10.6%</td>
</tr>
<tr>
<td>Serbia</td>
<td>22</td>
<td>40</td>
<td>32</td>
<td>80.00%</td>
<td>5</td>
<td>15.6%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>327</td>
<td>153</td>
<td>103</td>
<td>67.32%</td>
<td>4</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

---

The table below reflects the waste stream and the transport violations identified during the IMPEL Operation. WEEE was sighted in 95 violations out of 1011. It is noted during the IMPEL operation that WEEE was often identified in consignments with end of life vehicles which is consistent with the information obtained by the work package 5 during expert interviews.

Table 2: Transport Violations by Waste Stream

<table>
<thead>
<tr>
<th>Waste Description</th>
<th>Year 1 Frequency</th>
<th>Year 2 Frequency</th>
<th>Overall Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood</td>
<td>14</td>
<td>140</td>
<td>154</td>
</tr>
<tr>
<td>Paper &amp; Cardboard</td>
<td>51</td>
<td>79</td>
<td>130</td>
</tr>
<tr>
<td>Tyres</td>
<td>19</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>Used Electricals (WEEE)</td>
<td>60</td>
<td>35</td>
<td>95</td>
</tr>
<tr>
<td>ELVs</td>
<td>38</td>
<td>32</td>
<td>70</td>
</tr>
<tr>
<td>Sewage Sludge</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Cables</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Glass</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Metals</td>
<td>50</td>
<td>46</td>
<td>96</td>
</tr>
<tr>
<td>Oil</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Organics</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Textiles</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Hazardous Waste</td>
<td>34</td>
<td>26</td>
<td>60</td>
</tr>
<tr>
<td>Plastics</td>
<td>74</td>
<td>26</td>
<td>100</td>
</tr>
<tr>
<td>Mixed Municipal Waste</td>
<td>33</td>
<td>172</td>
<td>205</td>
</tr>
<tr>
<td>Construction</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Wastes not otherwise specified</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other*</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No data</td>
<td>34</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>424</td>
<td>587</td>
<td>1011</td>
</tr>
</tbody>
</table>

*The description of some waste streams were considered difficult to categorise into existing waste descriptions for comparison between Years 1 and 2 and EA II. These materials have been classified as ‘Other’ and include waste from ‘waste water treatment’ and ‘mixture of waste’.

**It should be noted that there is overlap between illegal WEEE and ELV shipments, and often both waste streams were identified within one shipment. Where this has been the case we have only counted one

shipment with one waste stream, not both waste streams as this would result in ‘double counting’ of violation data. For the purposes of this project these materials have been classed as ‘WEEE’.

The table below reflects the waste stream and the company violations identified during the IMPEL Operation. According to this data, WEEE represented approximately one third of the violations identified.

Table 3: Company Violations by Waste Stream

<table>
<thead>
<tr>
<th>Waste Stream Description</th>
<th>Total (Year 1)</th>
<th>Total (Year 2)</th>
<th>Overall Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper &amp; Cardboard</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Tyres</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Used electricals (WEEE)</td>
<td>20</td>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>ELVs</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Cables</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Metals</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Plastics</td>
<td>6</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Hazardous Waste</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Mixture of waste</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Wood</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Textiles</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Batteries</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42</strong></td>
<td><strong>58</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4 WEEE CONTINUUM OF CRIMINAL ACTIVITIES

An outcome of this deliverable is to describe which WEEE related activities are considered criminal in the current legislative framework. The violations that occur in WEEE-related activities can be administrative or civil violations, but can also fall under the criminal code. The activities can be non-compliant with registration and licences, but can also be related to reporting formalities or compliance with regulations. To obtain an overview of these different types of violations, a preliminary WEEE compliance continuum is proposed to be further developed throughout the duration of the CWIT Project. Table 4 below describes violations under different grades of WEEE compliance, starting with a completely compliant business model, to a completely non-compliant (criminal business model) on the right.

Table 4: Preliminary WEEE Compliance Continuum

<table>
<thead>
<tr>
<th>Elements of actors, activities and violations</th>
<th>I. Compliant business model</th>
<th>II. Unintentional regulatory violations</th>
<th>III. Intentional regulatory violations</th>
<th>IV. Criminal business model</th>
</tr>
</thead>
</table>


36 The production of this preliminary continuum – table has been inspired by World Customs Organization (WCO) materials on “degree of risk of non-compliance and client behavior”
<table>
<thead>
<tr>
<th>Actor registration and licenses</th>
<th>Complies with all registration and license formalities</th>
<th>Might have minor mistakes in registration and license formalities</th>
<th>Might have any type of errors, to facilitate the intentional regulatory violations</th>
<th>Might have any type of intentional errors, to facilitate the fully criminal model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor documentation and reporting</td>
<td>Complies with all documentation and reporting formalities</td>
<td>Might have minor mistakes in documentation and reporting formalities</td>
<td>Might have any type of errors, to facilitate the intentional regulatory violations</td>
<td>Might have any type of intentional errors, to facilitate the fully criminal model</td>
</tr>
<tr>
<td>Activities and activity outputs (including collection, warehousing, refurbishment, trading, transport, export, transit, import, processing, recycling, and disposal)</td>
<td>All activities and outputs are in compliance with regulations</td>
<td>Might have minor regulatory violations in activities and outputs</td>
<td>There are likely to be some regulatory violations in activities and outputs</td>
<td>There are likely to be several regulatory violations in activities and outputs</td>
</tr>
<tr>
<td>Types of regulations violated</td>
<td>None</td>
<td>Administrative / civil; while criminal code violations are possible but unlikely</td>
<td>Can be criminal code and/or administrative/civil</td>
<td>Criminal code (may also be administrative/civil)</td>
</tr>
<tr>
<td>Types of industry standards / commercial agreements violated</td>
<td>Possible</td>
<td>Possible</td>
<td>Possible</td>
<td>Possible</td>
</tr>
<tr>
<td>Frequency of violations</td>
<td>None</td>
<td>Seldom</td>
<td>From time-to-time to frequent</td>
<td>From frequent to continuous</td>
</tr>
<tr>
<td>Actor economic model</td>
<td>Fully legal business</td>
<td>No intended income from the violations</td>
<td>Intended income thanks to the violations; still only part of the total economic model</td>
<td>Illicit economic model, which may be combined with a legal model, in particular when it “facilitates illicit”</td>
</tr>
<tr>
<td>Could organised crime groups (OCGs) play a role here?</td>
<td>Not within current definition</td>
<td>Not within current definition</td>
<td>Possible, but unlikely</td>
<td>Possible</td>
</tr>
<tr>
<td>Broader attitudes by the actor</td>
<td>Actor is concerned with environmental, health and safety issues; invests in continuous improvement of operations etc.</td>
<td>Might have some “attitude problems” e.g. in terms of training activities, process development, compliance management systems etc.</td>
<td>Actor does not care about the negative environmental, health and safety impacts s/he is causing.</td>
<td>Actor has no principal concerns whatsoever for environmental, health and safety issues.</td>
</tr>
</tbody>
</table>
In the following diagram, the WEEE operations are presented as described in detail in Work Package 4 deliverable, *Typology of companies involved in the export market*. The focus is primarily on the ‘activity’ type, input flows and output flows and correlate with the ‘activities and activity outputs’ detailed in the compliance continuum above. The above violations are predominately related to the transfers illustrated in the diagram below. The actual trade or ‘transfers of WEEE’ are portrayed as arrows between the actors. This mapping of the theoretical supply chain, and the correlation with non-compliant activities, will assist in developing best-practice for enforcement in the WEEE stream.
An objective of Deliverable 5.1 is to examine how organised crime theory can be applied to WEEE. To this end, this section will examine how organised crime is defined and how it is structured. The final section of this chapter will discuss how this theory applies to WEEE by applying the theory to criminal cases.

5.1 Definitions

While most research and criminal law is focused on criminal acts or individuals, examining the way in which groups of individuals work together to commit a crime has become increasingly important. To understand organised crime, researchers and law enforcement agencies have come up with numerous definitions. More than one hundred and fifty definitions of ‘organised crime’ have been developed, varying widely from country to country.37 This high number of definitions demonstrates the complexity of the term ‘organised crime’. Most definitions consist of different attributes (criteria), such as organisational structures, interactional patterns, continuity, severity of crimes committed (defined by the time of incarceration), patterns of corruption, use or threat of violence, market position and group philosophies/objectives.

For example, the definition in the United Nations Palermo Convention38 and the definition used in the EUROPOL Serious Organised Crime Threat Assessment (SOCTA) include criteria such as an

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organisational structure, continuity, severity of crime and group objectives. The definition of a “criminal organisation” in the SOCTA is as follows:

A structured association, established over a period of time, of more than two persons acting in concert with a view to committing offences which are punishable by deprivation of liberty or a detention order of a maximum of at least four years or a more serious penalty, to obtain, directly or indirectly, a financial or other material benefit.\(^{39}\)

The definition of organised crime in the United Nations Convention Against Transnational Organized Crime, which has been ratified by 179 countries around the world, includes similar attributes. The definition of an ‘organised criminal group’ in Article 2(a) is:

- A group of three or more persons that was not randomly formed;
- Existing for a period of time;
- Acting in concert with the aim of committing at least one crime punishable by at least four years’ incarceration;
- In order to obtain, directly or indirectly, a financial or other material benefit.\(^{40}\)

Countries can also have a legal definition of organised crime recorded in penal law, which is used in criminal cases. These definitions can be used to identify organised crime involvement, but they do not provide a detailed description of the organisational structures. Therefore the next section will describe different types of criminal structures.

### 5.2 Criminal Organisational Structures

There is a high variation of criminal organisational structures. These different types of organization vary on a continuum from non-organized to highly organized. Three main types of organizational structures on this continuum will be discussed. It will also be discussed where the activities of the criminal organization are located on the WEEE compliance continuum. In section 5.3 this theory will be applied to cases of illegal export of WEEE.

The first organisational structure in the continuum is that of individual traders and/or companies working together on a non-regular basis. This could be a very loose cooperation between actors involved in the illegal trade of WEEE. These actors might use services of companies that are unaware of the illegal status of these activities and are therefore involved in unintentional regulatory violations. However, they will mostly be involved in intentional regulatory violations.

The second structure is that of informal criminal networks. There is a growing recognition that crime is increasingly operating through fluid network structures rather than more formal hierarchies. To examine the criminal structures in transnational environmental crime such as the illegal trade in WEEE, a new perspective is required. In relation to WEEE, networks are characterised as horizontal, voluntary, decentralised and flexible in responding to changing circumstances. Networks have few critical nodes and multiple actors, therefore lines of communication and exchange can easily be repaired if any one node is removed through interdiction or prosecution.\(^{41}\) That criminal networks are dynamic does not necessarily mean that there is no hierarchy or dependency between players. Certain players in the network can be more important than others, due to their resources of money,

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knowledge and contacts. Actors in criminal networks, can as individual traders both be involved in intentional and unintentional regulatory violations.

According to academics studying organised crime, there are three types of criminal networks: market networks, social networks and political networks.\(^{42}\) Illegal trade goes through market networks when goods are moved along a line of contacts (chain), but key aspects of the movement are overseen by one or two central players (hub). The illegal market for electronic waste is closely interwoven with the legal industry. The criminal acts are often carried out within a company structure and motivated primarily by financial gain. The line between the legal and the illegal can be unclear, especially in cases where compliant and non-compliant actors transact with each other. As companies commit offences, so do legitimate actors. Non-compliant or criminal actors take advantage of the demand for certain goods and services and complex routes are utilised such as transit shipments through multiple points in an attempt to avoid scrutiny by enforcement authorities.\(^{43}\) In relation to WEEE, a range of different company types can be involved, such as: WEEE producers, WEEE collection points, WEEE logistics companies, WEEE treatment companies and WEEE compliance schemes.

Though the market network theory explains the business relations between the different actors, it does not give a full explanation of what binds all these actors together. Social mechanisms are equally important, such as family relations or common backgrounds in a geographical neighbourhood. The social aspects of criminal networks structure the ways in which intermediaries establish and maintain contacts and the ways in which bonds of trust are sustained in the absence of a formal hierarchy.\(^{44}\)

The third organisational structure is based on a traditional view on organised crime. Traditional organised crime groups have a pyramid like structure, a clear division of tasks, a code of conduct and internal sanctions.\(^{45}\) Types of organised crime groups that fall into this framework are crime syndicates such as the Mafia and Yakuza. Within the behavioral continuum of WEEE compliance and violations, traditional organized crime groups operate as a criminal business model. There is a criminal code and there are likely to be several regulatory violations in activities and outputs. Based on these types of groups, models of organised crime have been developed, that serve as diagrammatic representations of social events.\(^{46}\) Causal models aim to explain a dependent variable by one or more independent variables and present a linear view of causality, while analytical models portray a complex set of connections among a set of variables.\(^{47}\) The diagram below portrays a causal model, in which four elements are represented, the government, society, illegal markets and organised crime. In this model each elements leads to another, giving a rather one dimensional approach.


The ‘Analytical Model’ is more complex and gives a multidimensional representation of the relationships. It contains three core elements: the actors, the structures and the activities, in addition to three environmental elements, society, government and the public discourse. As shown in the diagram below most elements are interconnected, with relations between elements going both ways.

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**Figure 4: Cressey model. Source: Von Lampe**

**Figure 5: Analytical model. Source: Von Lampe**

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The following table illustrates the different organisational structures of criminal actors that were identified. For each structure, it shows the characteristics, sub-structures and types of actors. In addition, the table shows where the activities of the actors fall into the WEEE compliance continuum and if the structure meets the criteria of an ‘organised criminal group’ under the Palermo Convention definition. The table below reflects the actors who would be identified as committing the violations detailed in the Preliminary behavioral continuum of WEEE compliance & violations.

### Table 5: Preliminary Continuum of Criminal Organisational Structures

<table>
<thead>
<tr>
<th>Continuum of Criminal Organisational Structures</th>
<th>Individual traders and/or companies</th>
<th>Informal* criminal networks</th>
<th>(Traditional) organised crime groups</th>
</tr>
</thead>
</table>
| Characteristics | • One-off or several collaborations  
• Non-regular basis  
• | • Horizontal structure 
• Voluntary  
• Decentralized 
• Fluid-flexible to changing circumstances 
• No hierarchy, dependency  
• | • Vertical structure (hierarchical) 
• A clear division of tasks  
• A code of conduct 
• Internal sanctions  
• |
| Sub-structures | • No sub-structure  
• | • Market Networks 
• Business Networks  
• Social Networks  
• | • Crime syndicates and crime groups  
Examples:  
• Mafia  
• Yakuza organisations  
• Drug cartels  
• |
| Types of actors | • Companies  
• Traders  
• | • Companies and/or Individuals  
• | • Relations with companies 
• Individuals  
• |
| WEEE Compliance Continuum | • Unintentional Regulatory Violations  
• Intentional Regulatory Violations  
• | • Unintentional Regulatory Violations  
• Intentional Regulatory Violations  
• | • Criminal Business Model  
• |
| Meets criteria of United Nations definition of an ‘organised criminal group’ (3.1) | No, because the relations do not necessarily exist for a period of time  
| | Yes/No, depending on if a crime is punishable by at least four years' incarceration  
| | Yes, this type of organisational structure meets all the criteria  
| |

* In this context an informal network refers to a network that is self-made amongst its members, it arises naturally, while formal networks (groups) form at upper levels and communicate from the top down.

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5.3 Organisational Structures in the Global Distribution of WEEE

The objective of CWIT deliverable 5.1 is to define organised crime in the global distribution of WEEE. This a non-traditional crime area as the illegal global distribution of WEEE might not fit into the standard definitions, such as the definition in the Palermo Convention. To prevent limiting the scope for the following work package 5 deliverables, this section will describe how criminals are organised following the organisational structures discussed in section 5.2. This analysis is based on the responses from the questionnaires sent to the INTERPOL member countries, the information provided by experts working at law enforcement and environmental authorities in Europe and more detailed cases provided by relevant authorities.

In total, fourteen countries provided responses via the questionnaires. The questionnaires provided very limited information regarding how the criminal activities are organised. Three countries reported that they are aware or suspect there is some form of organisation, or that the crimes are committed by a criminal network of individuals. Authorities in one country reported that offenders ‘seem to be part of criminal networks’, and another reported the ‘formation of a criminal group working together to commit the crime’ but gave no indication if this was an enduring or on-going network. A third country reported that in fourteen cases the crimes were committed by individuals, but they ‘suspect there is a form of organisation’. Whereas the information from the questionnaires only gives an indication of the type of structures, more detailed information was provided in the expert interviews.

Expert A, working in a European national environmental authority, stated that organised crime as defined by their laws, has not been identified in the illegal trade in WEEE. However, there is an organisation of business owners and companies, doing some illegal activities within the framework of their legitimate business. They are located in Europe (the Netherlands and Belgium), Asia and Africa (mostly French and Dutch companies).

Expert B from a Central European police authority also stated that the illegal trade in electronic waste consists of informal networks of individuals rather than formal organised crime groups. The police had not identified one main organiser. This network consists of individuals of African origin, living in Central Europe. They also work with contacts in Africa, such as family members. In this network, social mechanisms are important to unite the individuals in the network. As discussed in the theoretical section, social aspects, such as family relations or common backgrounds in a geographical neighbourhood establish and maintain contacts and bonds of trust. In this particular country, the network of individuals is linked to packing locations for e-waste. These locations are rented by people of African origin and exist in all major cities. There is an organised system to rent these buildings and sub-rent them to African citizens who assist with shipments of e-waste. This creates a system of illegal waste export experts.

Expert C who was interviewed from a national environmental authority stated that two criminal groups were identified that are involved in the illegal trade export of WEEE. These groups both consist of members with the same nationality. The first is a group consisting of around sixty individuals with a Romanian nationality. They were picking up electronic appliances that civilians left on the street for the city council to retrieve. In addition to electronic waste, they also bought vehicles that were exported to Romania. The intelligence unit could not create profiles of the individuals in the Romanian group. At the moment this group is no longer operating in the area, possibly due to a reduced supply of goods.

The second group involved in the illegal export of WEEE in this same area is a group of Nigerian nationals. They are working on a larger scale and are also suspected of being involved in other crimes such as money laundering and drugs offences. It was suspected that the members of this group were linked to a second group in a neighbouring country through familial links however the potential
organised crime links were unconfirmed. Though it has not been confirmed, there might be organised crime groups involved, with stronger links than the informal networks previously described.

Expert D stated that the definition of organised crime in their penal law cannot be applied to individuals in the illegal export of WEEE. Authorities did identify two main networks that are involved in the illegal trade of WEEE. The first is a network involved in illicit export to Asia and the second network is mainly involved in export to West Africa and/or Eastern Europe. In their jurisdiction there is a network of individuals with an Eastern European nationality that collect second-hand material and export it to Eastern Europe, or collect WEEE and sell it to other traders. These traders can be local companies or individuals that are exporting to West Africa or Central/Eastern Europe. The traders are often legal companies that are also involved in illicit trade. These companies are usually involved in the business of second hand goods. They try to export waste that is declared as second hand goods. This demonstrates a market type network, in which the illegal market for electronic waste is interwoven with the legal industry. The companies that export to Asian countries are usually (metal) recycling facilities. There are no connections identified between the two networks.

Finally, Expert E working in an international recycling company provided information regarding a case that occurred within the company and involved an organised criminal group. The crimes took place in one of their recycling plants, where materials were disappearing on a large scale. After investigations, camera footage showed armed robberies with the use of serious violence and firearms. During the investigation, it was discovered there was involvement of internal staff in the robberies. In previous cases described by other experts, the companies were prosecuted as legal entities for being involved in illegal WEEE activities. In this case, internal staff (technical staff, the cleaning company and security) was allegedly involved in the illegal activities without awareness from management or the company owners. This is a good example of the unclear line between the legal and illegal in crimes related to WEEE. According to the expert, small-scale companies are the most vulnerable in the WEEE chain as the larger companies have the policies and structures in place to avoid fraud. These are the companies where most criminal activities occurred and are facilitated. Investigations also demonstrated that individuals involved in illegal WEEE related activities were members of mafia-like organisations. The company also has strong indicators that money generated with this process is used for financing other activities such as weapon trade and narcotics. Expert F: ‘I’m sure that money generated with e-streams is being used for the financing of other criminal activities of big organisations’.

Authorities provided four cases with operational and investigative information. One of the cases from the United Kingdom, revealed the involvement of eleven individuals and four companies in the illegal transport of hazardous WEEE to Nigeria. The relations between individuals and companies consisted mostly of business relations, such as agreements on warehousing, collection, consolidation and transportation. One individual in the United Kingdom, had links with importing companies in Congo, Ghana, Ivory Coast and Nigeria.

In an Italian case there were thirty-eight offenders, six companies and two non-governmental organizations involved. They were labeled as a criminal organizations in the prosecution process. According to authorities, in this case transnational organized criminal networks as defined by the Palermo Convention seemed to have played a role. In another Italian case authorities discovered a ‘well rooted criminal network’ involved in illegal hazardous waste shipments from Italy to Nigeria and Ivory Coast. The network consisted of fourteen Italian and African citizens acting as suppliers, carriers and waste managers. There was also involvement of four companies. The perpetrators were sentenced for illegal activities of organized international trafficking of waste and were required to remediate the site. More details on these cases will be provided in deliverable 5.3.
From the questionnaires, expert interviews and cases it can be concluded that the organisational structure of the individuals involved in the illegal export of WEEE differs per country and per region. The structures that are described are somewhere on the continuum between individual traders and organised crime groups (Section 5.2). Most of the cases described in the interviews do not meet all the criteria as defined by the United Nations, as the group must have committed an offence that is punishable by at least four years' incarceration and this penalty was not given. The loosely organised networks mostly consist of individuals that were linked by nationality. These networks are horizontal and decentralised. However there is one exception, which is a case described by the expert working in the recycling industry. The offenders in this case supposedly had links with mafia-like organisations, used serious violence and firearms, and the money generated in illegal WEEE activities was allegedly used for financing other crimes such as the trade in weapons and narcotics.

In all the cases there were links with companies, demonstrating how the legal and illegal markets for electronic waste are closely interwoven. The business relations between individuals and companies in the supply chain form the basis for most of the networks. The offenders involved were either company owners, company staff or individuals that cooperated with companies. Further details will be outlined in Deliverable 5.3.
6 CRIME TYPOLOGIES

The information collection phase of CWIT was designed to provide a consistent method for collecting information on illicit WEEE trade, logistics and disposal activities across jurisdictions and agencies. The research conducted through this method can be considered a starting point for gaining a picture of the actors, the methods and drivers for the illegal exploitation of the WEEE supply chain - all this with the ultimate agenda to enhance capabilities to effectively and efficiently identify the factors that facilitate illicit WEEE activities in the future.

The case study collection activity, which includes information in the form of a questionnaire and expert interviews, is analysed below to begin the process of identifying patterns and common characteristics across the actors, commodities and destinations of the case studies provided for this project. The later deliverables of the project include criminal analysis and a matrix of the criminal typologies which will be expanded on in deliverable 5.3 and 5.5. The information from the questionnaires was supplemented by four significant case studies that reflect the actors and modi operandi of transnational illegal WEEE trade. Two of these case studies were from Italy and two were from the United Kingdom. The analysis identified some commonality across the cases, in particular regards to how the shipments were detected and identified as illicit and the categories of WEEE detected. Some of the preliminary case study findings presented in this paper correspond with previous literature, in particular findings on the deliberate mislabelling and misdeclaration as a method of concealment to avoid detection by border official interventions. At the same time, findings regarding the involvement of organised crime in these cases did not indicate so far the involvement of a known organised criminal network. Naturally, there were indications that both a sender and receiver were complicit in the illegal act; however, there were limited indications across these case studies collection via questionnaire of organised crime activity.

The commonly held belief that organised crime is the main principle driver in this illicit supply chain requires far more extensive research in order to be fully substantiated. Besides this, the frequency and types of violations observed show that there is as a minimum a ‘crime continuum’ ranging from unintentional violations all the way to more organised types. In any case, this research activity identified key trends and information gaps that are common across reporting countries. Information being returned commonly excluded data on the actors involved in the previous steps in the supply chain, suggesting that once the goods was detected and dealt with via seizure and application of penalty, there was limited analysis on the broader network involved in the activity. This may be due to a lack of resources by the respective agencies, the knowledge of the respondent or the penalty being too minor to warrant further investigation.

6.1 Modus Operandi and Violations

In the case study questionnaire (Questionnaire A), countries were requested to select the violations and category of the offence. Countries were asked to select from the options below and to provide explicit details for the category of offence and the violations identified.

If this violation led to one or more court cases, please advise the categories and the official charges?
- Civil
- Criminal
- Administrative
- Other, please specify

Which violations were identified?
As supported by the literature review conducted in conjunction with the CWIT case study collection, ‘false declaration’ of the containers contents was overwhelmingly cited by countries in consignments identified as non-compliant, and that in cases where it was believed to be deliberate criminal activity, misdeclaration was used in an attempt to avoid the scrutiny of border authorities. Most commonly the container was declared as ‘Used Goods’, or a similar variation. This was likely an attempt to exploit the authorities’ difficulties to define an item as EEE or as WEEE. Another common declaration was that of ‘Metal Scrap’ or in two cases, no declaration at all. Four countries cited the Waste Shipment Regulation 1013/2006 in relation to the violations detected, however they did not explicitly detail the article of the regulation that was violated. In eight instances, countries cited violations of ‘Customs Procedures’ and the same number identified ‘Labelling and Record Keeping’ as a violation associated with the illicit WEEE shipment detected. In six instances, the absence of the necessary ‘Permit Requirements’ was cited as the violation. Countries also identified the waste as being ‘Hazardous’, specifically in cases where refrigerators and/or compressors were detected. In one instance, an exporter was using an expired consent from a competent authority and exceeding the volume allowed on this consent.

In both of the UK case studies, the containers were generally declared as ‘used household goods’ or ‘used electronics’. There were also several instances where the containers were declared as ‘used tested electrical equipment’ or ‘used working electricals’. These case studies also revealed the use of a ‘front’ of well-packaged goods to hide the rest of the load. Several rows of wrapped and stacked CRTs with Portable Appliance Testing (PAT) testing labels hid the remainder of the load, which was not protected from damage in transit. These shipments were in breach of the Transfrontier Shipment of Waste Regulations 2007 and the European Waste Shipment Regulation 2006.

In one of the Italian cases, the shipments were claimed as charity, and forged documentation for transport, export and border controls were used.

In the IMPEL – TFS Enforcement Actions III Project Report, ‘Notification Incorrect’ was the most common violation reported during their operation running from March 2012 to December 2013. While this operation looked at all waste types and was not specific to WEEE, there is some obvious correlation in the results from this operation with the violations identified via the WEEE stream using the questionnaire method. Second to ‘Notification Incorrect’, ‘Annex VII incomplete’ and violation of ‘National Regulation’ were the most common violations identified during the IMPEL operation. IMPEL reported that for company inspections, WEEE accounted for 36% of the total violations and for transport inspections WEEE accounted for 9%. Five countries reported in the questionnaire that the violations were considered ‘Criminal’ under their legislation. Four reported that the matter was ‘Administrative’ and one case was recorded as

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51 During the operational period, 1011 violations were identified during transport inspections: ‘Notification Incorrect’ represented 277 instances; ‘Annex VII incomplete’ represented 258 violations and ‘National Regulation’ represented 140 violations. During company inspections ‘Annex VII incomplete’ represented the highest number of violations with 16 of the total 100 violations identified during the operation.
‘Civil’. In two instances it was recorded as both Administrative and Criminal. Only one country cited specific legislation and the detail of the remaining country-supplied information was inadequate to identify any convergences across the application of the various legislations. The information collection on the legislative framework by CWIT Work Package 3 aimed to identify violations associated with the illicit transport of WEEE. A list of the 12 regulatory questions related to illicit WEEE trade that was posed to respondents can be found at Annex B along with a corresponding list of how these regulations could potentially be violated.

6.2 Products, routes and transport modes

The commodities most commonly reported fell within the category classified as ‘Screens’. The countries identified liquid crystal display (LCD) flat screen televisions, plasma televisions and cathode ray tube (CRT) televisions as the most common commodity identified in illicit WEEE shipments. The next most common category was ‘Fractions’ which included batteries, cables and printed circuit boards. Compressors and refrigerators was the next most common category followed by IT Equipment, Small Household Appliances and then Large Household Appliances such as washing machines and microwaves. In the cases during this information collection via questionnaire and interview, there were only four instances where the WEEE was mixed with other commodities. In these cases, functioning vehicles, car parts and waste tyres were in mixed consignments with the WEEE.

The reported routes for these particular case studies included exporting, transit and importing countries. Destinations countries included Afghanistan, China, Hong Kong, Vietnam, Indonesia, Pakistan, Ghana, Cameroon, the Democratic Republic of Congo, Ivory Coast, Nigeria, Bulgaria, Germany, Lithuania and Serbia.

Sending countries included Spain, Czech Republic, Finland, France, Greece, Italy, Serbia, Romania, Netherlands, Norway, Germany, Sweden, Switzerland and the United Kingdom. Transit countries included Belgium, the Netherlands, Hungary and Germany.

Within the EU, overland transport was used to move goods between Western, Central and Eastern Europe and reporting indicated that consignments were transported across countries to reach particular ports. An example is a case where 14,264 tonnes of printed circuit boards followed the route of Serbia, Hungary and Germany. It was unclear from the information if Germany was the ultimate destination or if further shipment was intended. Nevertheless, over land routes are used for considerable volumes of WEEE and this is not exclusively a maritime issue. The destinations of Africa and China dictate the use of maritime transport and no case studies cases reported the use of air transport of inland waterways in any of their transportation modes.

6.3 Actors

While the nominal details of the offenders identified by countries remain within the law enforcement sector due to the information’s sensitivities, respondents to the questionnaire were asked to classify the identified offenders into one of the following categories of actors and asked to provide details of their role and whether their involvement was at the export, transit or export point in the supply chain.

- WEEE/e-waste dealers/brokers
- Transport companies
- Terminal operators (e.g. port terminals)
- Customs brokers
- WEEE/e-waste collection organisations/facilities
- WEEE/e-waste management organisations (including producer compliance schemes)
• WEEE/e-waste treatment facilities
• Refurbishers
• Other (including private individuals)

The WEEE dealers and brokers were identified in five of the cases at either the importation or exportation points in the supply chain, or both. Treatment facilities were identified as being an offender on an exportation case and also listed in one case as facilitating the transit of goods. Transport companies were identified in four cases as facilitating the activity; however, this was usually in instances where another actor was also identified such as a dealer or broker. In two instances, WEEE collection organisations were identified. It is important to note that the actors identified as playing some role in the facilitation of the illicit WEEE were not all always prosecuted or received punishments.

In the UK case studies, several loading sites were implicated. All but one of the operators of the loading sites implicated were authorised to handle WEEE in some way – either for repair and refurbishment or for temporary storage – through environmental permits or exemptions. Two freight forwarding companies were also implicated for their involvement in the illegal shipments.

In one of the Italian cases, several companies involved in the coordination and management of international shipments (including export and customs procedures) were implicated, as were two non-profit organisations facilitating the shipments. In the other Italian case, the actors involved were acting as suppliers, carriers and waste managers.

Two freight forwarding companies were also implicated as part of a United Kingdom case for their involvement in the illegal shipments. The figure below reflects the relationship between the actors involved in a significant UK WEEE case and the role of these actors in the WEEE supply chain.

Figure 6: Actors in a significant United Kingdom case
The following figure details more specifically the relationships between a prosecuted offender who had a service level agreement for the storage and consolidation of WEEE collected from municipal sites, and other actors in the WEEE supply chain.

![Diagram](image)

**Figure 7: Relationships of actors prosecuted in the United Kingdom**

In one Italian case, several companies involved in the coordination and management of international shipments (including export and customs procedures) were implicated, as were two non-profit organisations facilitating the shipments. In the other Italian case, the actors involved were acting as suppliers, carriers and waste managers.

### 6.4 Economic benefits and negative socio-economic impacts

In the cases that were reported through the questionnaires, only one country provided an estimate on the economic benefits related to the illicit WEEE trade and the figure could only be provided as a broad estimate ‘amounting to hundreds of thousands of euros’. Further work will be conducted on the potential economic benefits of the illicit WEEE trade in later Work Package 5 deliverables.

The negative socio-economic impacts of the illicit WEEE were almost exclusively cited as relating to the potential environmental damage and impacts on the destination country. All but one shipment was detected at the border, so the environmental impacts were notional and could only be inferred in the event that the WEEE was illegally dumped. One country did report the potential loss of government revenue and the potential loss of professional WEEE recycling and treatment due to this industry being by-passed in favour of illicit shipment and export.

Based on analysis of two significant cases from the UK, the illicit profits per container were estimated to be between £6,000 and £8,840.
One Italian case revealed that the monthly illicit profit from illegal shipments to Africa was about €25,000, on top of the profit from their legitimate businesses. This investigation also revealed that the cost of acquiring one falsified bill of lading was €3,500. The trafficking observed in the other Italian case was estimated to generate more than €500,000 per year, given that the costs required to properly dispose of the waste were avoided.

6.5 Detection and inspection methods

In the case study questionnaire, countries were asked to classify the method of detection into one of the following three categories.

How was the illegal shipment discovered?
- Targeted intelligence-led operation, if so, what are the details?
- Random inspection, at what rate were containers inspected?
- Systematic inspection, which criteria are used to determine which containers will be inspected?

In seven cases reported through the questionnaire, the illicit shipments were detected through systematic profile and detection methods determined by the authority in that country. Details of the criteria that determine whether a shipment is searched for WEEE remains within the confines of law enforcement. Of those seven cases detected in this manner, three were part of a multi-jurisdictional operation in conjunction with the World Customs Organization and IMPEL-TFS. Three other cases were targeted based on specific intelligence of the consignment containing WEEE. Another six cases were discovered via random inspection. The triggers, if any, that prompted officers to select that particular consignment for inspection also remain within the confines of law enforcement. Four cases did not provide details of how the consignments were detected. Again, looking at enforcement data collected during the IMPEL – TFS Enforcement Actions III Project, 1,011 violations were identified during transport inspections from 11,890 administrative inspections; 10,524 physical inspections and 3,162 waste inspections reflecting 32% that violated some regulation. Of the 100 violations identified during company inspections, 173 administrative, 262 physical and 354 waste inspections were carried out reflecting 28% that violated some regulation. 53

In terms of inspection methods, countries were requested to identify the detection and inspection techniques used.

Were any of the following detection and inspection techniques and technologies used?
- Non-intrusive inspection (NII), e.g. X-ray
- Manual/visual, e.g. opening containers
- Cargo tracking
- Satellite imaging
- Other

Ten countries identified that they used Manual/visual techniques for detection and inspection. A further four identified Non-intrusive inspection methods and one country identified examination of documents as a method for detection. All other details of the detection and inspection methods remain within the confines of law enforcement.

In the UK cases, the offenders were identified through profiling. One individual was targeted for additional scrutiny when he again attempted to make illegal shipments.

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The Italian authorities utilised communications intercept, phone records and covert surveillance to detect illicit activity in two cases.

During the IMPEL – TFS Enforcement Actions III Project report, they reported a total of 9335 administrative and 6964 physical transport inspections were undertaken in Year 1 of the project, with the majority conducted on roads or at ports, combining a mix of random, on site and targeted inspections. Waste shipments accounted for 21.4% of these inspections, of which 28.5% (424) were in violation of the Waste Shipment Regulation (WSR). Over the same period, 225 company inspections took place, of which, 184 were waste-related, with 42 violations detected. A total of 2555 administrative and 3560 physical transport inspections were undertaken throughout Year 2. The proportion of waste shipments was 27.4% (1673) and, of these waste-related transport inspections, a total of 587 (35 %) were in violation of the WSR. Over the same period, 210 company inspections took place, of which, 170 were waste related, with 58 violations detected.54

6.6 Investigations, prosecutions and punishments

Countries were requested to provide details of the outcomes of the investigation and the punishment. Not all countries were able to provide the outcome – in four instances, countries did not provide the result and one was still an ongoing matter. The categories below were provided to respondents to assist in categorising the punishment received.

Which penalties were imposed as a result of this offence?

- Fine (to an individual? to a company?)
- Probation
- Imprisonment
- Confiscation of property/assets
- Suspension/revocation of licenses
- Requirement to remediate site
- Restrictions to future related employment
- Other, please specify

In two cases, the containers were returned to the country of origin. One case indicated that the punishment included restrictions on future employment. In this case the actors involved were identified as WEEE treatment facilities. Two cases involved probation, one involved suspension/revocation of licences and one resulted in the obligation to pay the cost of treatment. None of the case studies reported by countries through the questionnaire collection method resulted in custodial sentence however the United Kingdom and Italian case studies highlight the potential for custodial sentences in WEEE cases.55

The most common punishment was a fine. In fifteen of these cases, fines were imposed ranging from €200 to €45,780 (for a 14,264 tonne shipment of printed circuit boards). Another fine was €14,300 (for 22,229 tonne shipment of IT equipment). All remaining fines were under the €1,500 threshold.

One of the United Kingdom cases led to total fines of more than £200,000, with the level of fine assigned to each defendant depended on their level of involvement in the shipment. The highest fine placed on an individual was £112,000.

As a repeat offender one individual in the UK received a custodial sentence for illegally exporting waste. In one of the Italian cases, the offenders were given 19-month prison sentences.

55 In one of the Italian cases, specifically Operation FREON, 13 offenders were given up to 1 year and 6 months of prison sentence. In the United Kingdom, an offender received a custodial sentence of 16 months.
7 CLOSING REMARKS

In this deliverable, the criminal analysis work package has aimed to begin to identify a crime typology by creating a compliance continuum related to WEEE and in parallel, creating a Continuum of Criminal Organisational Structures which details the characteristics, sub-structures, types of actors involved and how the description of their activity correlates to traditional definitions of organised crime.

The case study protocol was an effective method to collect data to identify actual examples of enforcement activities to complement the theoretical modelling of the other CWIT work packages. Information gaps were identified in the information supplied but experts did note that as their expertise in enforcing illegal WEEE trade increases, the information available for law enforcement analysis will improve. It is clear from the analysis conducted to date, there is a variation in the level of organisation related to the illegal WEEE trade spanning from opportunistic crimes committed by individuals in isolated offences through to actors involved in the legal waste trade knowingly committing offences.

The theory of defining organised crime was discussed in this paper and examples of where organised crime was suspected by national authorities were provided. As the analysis progresses in this work package, further indicators of organised crime may be identified. From preliminary analysis of the information collected it is clear that the violations and non-compliance in the WEEE trade is not unique to one particular actor or group of actors. There is a degree of compliance and criminality that spans across a continuum. Judgments and final analysis of the organised crime aspect to illegal WEEE trade will be provided in Deliverable 5.5.
8 BIBLIOGRAPHY


Annex A

A.1 Countries requested to provide information via questionnaire

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