**Course: The E-waste Challenge**

**Topic 1: What happens to e-waste around the world?**

# Opening screen

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| **Screen #** | **Onscreen text** | **Design instructions** |
| Opening screen | **What happens to e-waste around the world?**  Where do our gadgets and appliances go at the end of their useful lives? Here we look at different approaches to the collection, trade, and movement of e-waste. We also explore how these treatment processes may be influenced by international agreements.  Click the **About** button to learn more.  **[Button: About]** | Standard opening screen |
| Subscreen: About | **Learning outcomes**  The learning outcomes and linked activities will enable you to:   * Explain five different scenarios for e-waste disposal around the world; * Identify which laws apply to each scenario; * Consider which combination of the scenarios applies to your context. |  |

# Topic 1: What happens to e-waste around the world?

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| **Screen #** | **Onscreen text** | **Design instructions** |
| 1.1 | **Disposing of e-waste: Four scenarios**  Improper collection and treatment processes can seriously impact the environment and our health.  The United Nations University (UNU) describes four typical e-waste scenarios for the collection, trade, and treatment of e-waste. | Image of e-waste causing environmental harm |
| 1.2 | **Scenario 1: Official take-back (collection) system**  In this scenario, e-waste is collected by designated organizations, producers, and/or the government. This happens via retailers, municipal collection centres manufacturers, and/or pick-up services.  The final destination for e-waste is a state-of-the-art treatment facility, from which they recover valuable materials in an environmentally sound manner, reducing any negative impacts. |  |
| 1.3 | **Scenario 2: Disposal of e-waste in mixed residual waste**  In this scenario, consumers put their e-waste in their household dustbins alongside other types of domestic waste. The disposed e-waste is then treated with the regular mixed waste. Depending on the region, it can either be sent to a landfill site or municipal collection centre.  Land filling and solid waste incineration are not appropriate methods to treat e-waste because both lead to a loss of resources and have the potential to negatively impact the environment.  For example, the e-waste in a landfill site can lead to toxic chemicals escaping into the soil and water. |  |
| 1.4 | **Scenario 3: Collection of e-waste outside of official take-back system**  In this scenario, e-waste is collected by individual waste dealers or companies, and then traded through various channels. Because this is a market-driven business, these types of e-waste tend to be the products from which most profit can be made.  E-waste is traded freely at the national level, and usually its quantity is not systematically documented or reported to authorities. In some countries where no legal obligations apply, producers can offer their own take-back systems. | [Wrong image] |
| 1.5 | **Scenario 4: Informal collection and recycling in developing countries**  In most developing countries, many self-employed people collect and recycle e-waste. They usually work on a door-to-door basis to buy e-waste from costumers at home, and then they sell it to recyclers. These types of informal collection activities provide a basic livelihood for many unskilled workers.  Because of a lack of regulation and the lack of formal recycling facilities, electronic products that do not have any reuse value are mostly recycled in a crude manner by unregulated ’backyard recycling’. This can cause harm to the environment and human health. |  |
| 1.6 | **The real picture is a mixed scenario**  Although various forms of official take-back systems (scenario 1) are in place in both developed and developing countries, the amount treated under such systems is reported to be lower than 50% of the total generated (40% in Europe, 24-30% in China and Japan, 12% in the US, and 1% in Australia) (Baldé, et al 2015).  All countries, even those that are regulated, still have to manage scenarios 2 and 3, whereby e-waste is discarded in the waste bin or traded privately. | A collage of the scenario pics |
| 1.7 | **Question:** Which scenario is the most common around the world?  Select the correct option and then select **Confirm**.   * Official take-back (collection) system * Disposal of e-waste in mixed residual waste [Correct] * Collection of e-waste outside of official take-back system * Informal collection and recycling in developing countries * A mix of the different scenarios   **[Button: Confirm]**  [Feedback]  The reality around the world is a mix of the four scenarios. | Standard activity screen |
| 1.8 | **The Basel Convention**  The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention) is the major international agreement that regulates the movement and disposal of hazardous and other waste across boundaries.(between nations) and specifically to prevent transfer of hazardous waste from developed to less developed countries (LDCs).  [link to website: <http://www.basle.int/>] | Image of the Basel Convention |
| 1.8 | **Activity: Which disposal scenario applies to your country, region, or town?**  For this activity, you are going to find out more about what happens to your discarded electrical and electronic equipment.   1. Interview one or more of the following:  * A local recycling operator * A door-to-door or informal waste collector * A consumer who uses (and discards) electrical and electronic appliances * An electrical/electronic retailer   What can they tell you about how e-waste is collected and treated in your local context?  2. Based on your research, which of the four scenarios seems to apply in your town, region, or country? (It is likely that more than one scenario applies.) | Standard activity screen  Because a variety of answers are possible here, consider including a section where students can collaborate or interact during or after this exercise where students can learn from each others’ findings. |
| 1.9 | **Summary**  There are four common scenarios for disposing e-waste around the world:   * Official take-back (collection) system * Disposal of e-waste in mixed residual waste * Collection of e-waste outside of official take-back system * Informal collection and recycling in developing countries * A mix of the different scenarios   The most common scenario is disposal of e-waste in mixed residual waste.  The Basel Convention is the major international agreement that regulates the transboundary movement and disposal of hazardous and other wastes. | Standard summary screen  Could we use a video to close whereby a course leader summarises these points to conclude and thanks the students for their participation? I think this would give it a more personalised touch. |

**Additional questions**

*Please answer the following questions. (Write no more than four sentences for each question.)*

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| **What additional information do we need to do a full QA review of this document?** |
| Ideally, I would need more information about:   * **Launch/navigation, usability & function** - does all the content work and is the right information revealed when the buttons are clicked? * **Interactive & video elements -** do they all work smoothly; are all answers and feedback are correct, do links launch as expected, and so on. * **Global appeal & course visuals** - does all content fit with brand guidelines? (colours, logos, visuals, fonts, icons, layout, etc.), relevance and quality of graphics and images, alignment of text, localisation considerations and other elements. (for example, UK or US English, or avoidance of slang for an international audience)? |
| **Additional feedback (queries and suggestions) for this topic’s learning designer** |
| * Do all images make sense with what’s being said? Are they relevant, audience-appropriate, and good quality? How do they display on mobile views? * Is the right information revealed when buttons like this are clicked? Have you clicked around in different areas to check it works as expected? Any errors or bugs noted? * Is it clear to the user whether open-input interactions are optional or required in order to progress? Is the character limit appropriate to the question? * For the activity in 1.8, can students interact anywhere post-activity? It would be good if they could collaborate, discuss findings and validate personal learning – if they understand what the others are saying and can join in, there’s a good chance they’ve learned the topic. |
| **Suggested improvements:** |
| * Ensure that each lesson has some indication of timing, i.e. how long on average it will take to complete it, which is useful for those who are studying alongside other commitments. * Don’t focus too much on the content itself such that we forget to create a strong support system to sustain long-term learning by providing ample opportunities for communication and collaboration. * Building in sufficient interactivity and gamification that can effectively provide relief as well as challenge the learners to think and apply assimilated learning. * Make it clear to the learner whether open-input interactions are optional or required in order to progress, and whether the character limit is actually appropriate to the question. |