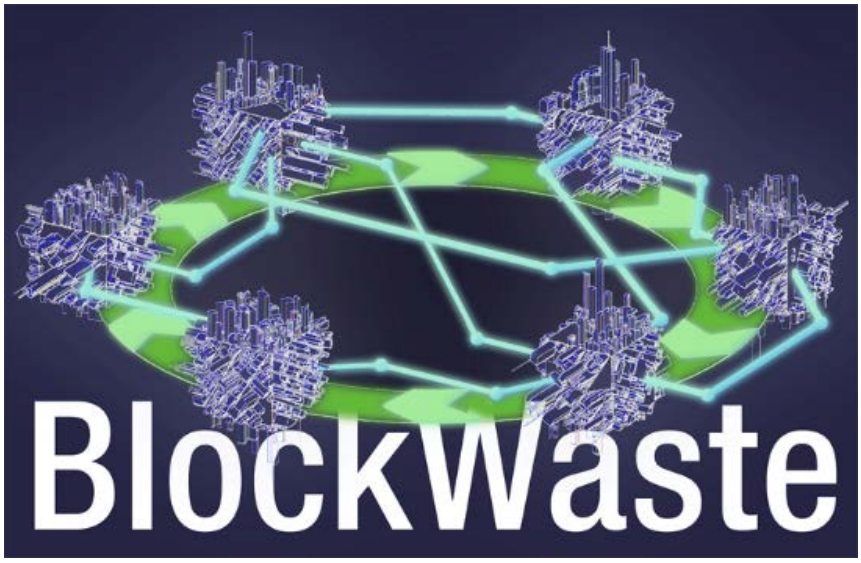
O4.A2 IT production of Open Educational Resource



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ΙΔΡΥΜΑ ΚΡΑΤΙΚΩΝ ΥΠΟΤΡΟΦΙΩΝ IKY

Co-funded by the Erasmus+ Programme of the European Union

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Project full title	Innovative training based on Blockchain technology applied to waste management - BLOCKWASTE
Field	KA2 - Cooperation for innovation and the exchange of good practices KA203 - Strategic Partnerships for higher education
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Project End Date:	30-09-2022

Output details:

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Task Title: A2 - IT production of Open Educational Resource.

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Task leader: CTM

Author(s): David Caparros Perez, Centro Tecnológico del Mármol, Piedra y Materiales, david.caparros@ctmarmol.es, Spain, Juana Llorente, Centro Tecnológico del Mármol, Piedra y Materiales, juana.llorente@ctmarmol.es, Spain

Reviewed by: Maria Menegaki, National Technical University of Athens, menegaki@metal.ntua.gr, Greece

Document Control

Document version	Version	Amendment
V0.1	29/07/2022	Final Version – 30/09/2022

Contents

Executive Summary

This document outlines the development of the Open Educational Resource (OER) platform. The OER was produced under the Intellectual Output 4 " BlockWASTE Open Educational Resource (OER)" of the BlockWASTE project. The document describes the steps taken for the development of the BlockWASTE project website and the various sections/pages. Finally, it presents analytically the OER platform and the training material that was developed.

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1 Introduction

1.1 Brief project description

BlockWASTE aims to implement transnationally new educational contents with the goal of training its students in the partner countries and providing them with the necessary basic skills that allow them to act professionally as future workers in the sector, adding digital competences required by companies that are embracing the process of digital transformation. In this sense, the project is addressed to:

- Enterprises and SMEs, IT professionals, urbanisms and waste management professionals.
- Universities (professors, students and researchers).
- Public bodies

The project includes four Intellectual Outputs as follows:

- O1. Learning materials for interdisciplinary Blockchain-MSW
- O2. European common curriculum on MSW applying Blockchain technologies to Circular Economy strategies
- O3. E-Learning tool based-on Blockchain-MSW focused on Circular Economy
- O4. BlockWASTE Open Educational Resource (OER)

1.2 Objectives of the document

This report is included in the task “O4-A2. IT production of Open Educational Resource”, corresponding to Intellectual Output 4 " BlockWASTE Open Educational Resource (OER)" of the BlockWASTE project.

An Open Educational Resource has been designed and produced to support the implementation of the produced BlockWASTE Course. Training materials have been produced for the Open Educational Resource (OER).

Specific multimedia materials have been created for the REA, which serve as an informative basis so that all students and professionals from the sectors involved have the necessary teaching methodologies to implement blockchain technology in waste management.

The training materials are open to any user. It is totally intuitive, in order to make the user take part in the learning process as much as possible.

The BlockWASTE OER and all the information about the project are available in the following url:

- BlockWASTE project web: https://blockwasteproject.eu/

- BlockWASTE OER: https://blockwasteproject.eu/oer/

The content of this document can be found in each of the partners' languages on the website.

2 BlockWASTE website

2.1 Development of BlockWASTE website

This website of the BlockWASTE project was created by CTM during the first period of the project and it is used as a common place to share the products of the project and base of the dissemination activities.

The first steps for the creation of this web page were taken in the first meeting of the project held online, where CTM, as the partner in charge of the development of the web page and the platform, proposed some of the web addresses which were valid for the project and which were available. Between all the partners they decided that it would be https://blockwasteproject.eu/

Decisions were also made about the logo of the project that would appear on the website. As it can be seen in the image below, the logo of the project appears on the main screen of the web page.

Once all the graphic details of the website, the menu and the logos were decided, designed and implemented, basic information about the project, such as the summary, the objectives, the list of reports developed during the project, etc., started to be included. Subsequently, the finalised documents resulting from the research and studies carried out by the project partners have been uploaded.

The BlockWASTE website includes the main intellectual outputs of the project, such as the E-Learning Tool (https://blockwasteproject.eu/elearning-tool/) and the OER (https://blockwasteproject.eu/oer/).

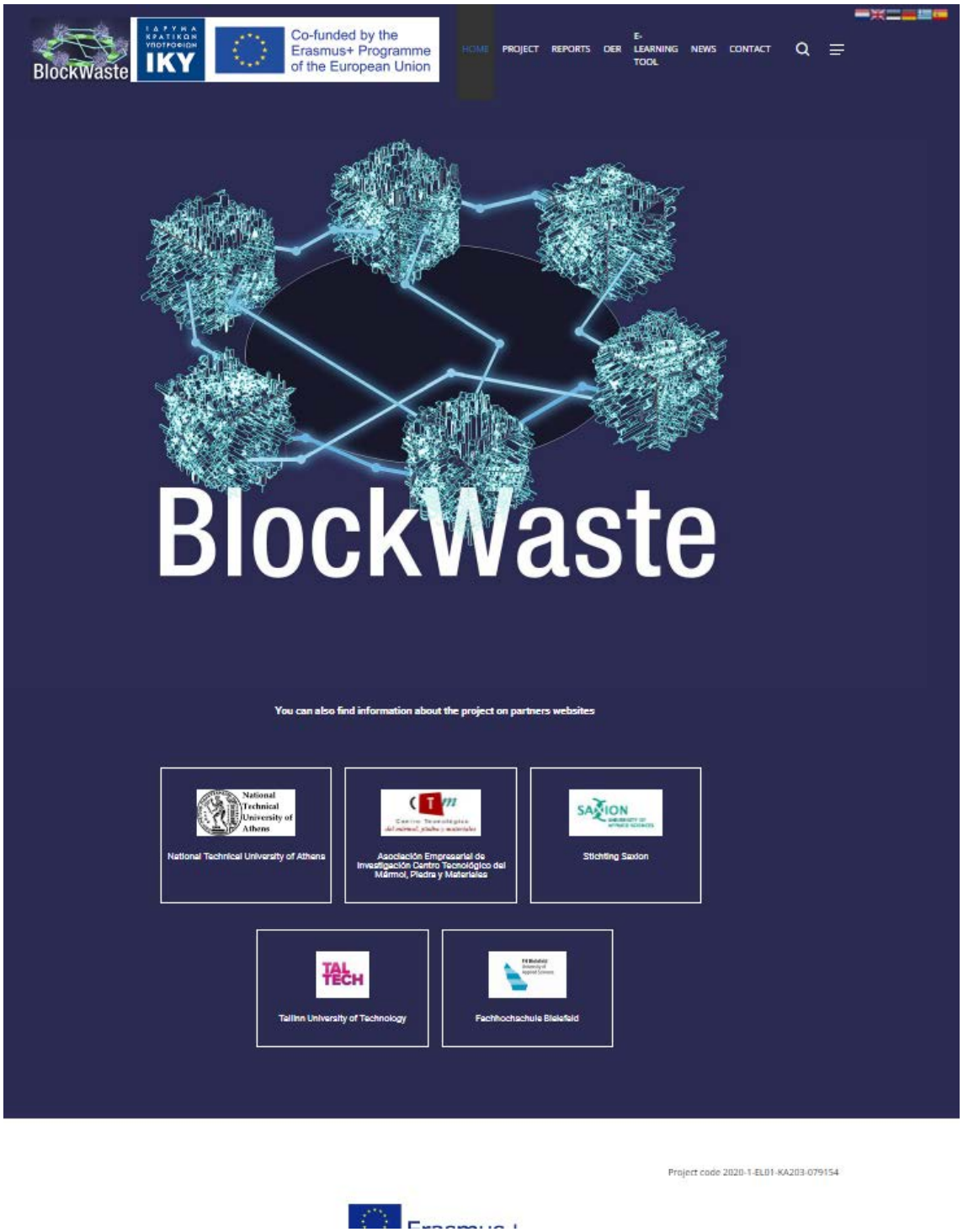
It should be noted that the entire website is available in all the languages of the project partners. For the translation of the available contents, all project partners participated by providing translations into their mother tongues, as well as making corrections to the English translations.

2.2 Presentation of BlockWASTE website

In the following imagen, it should be seen the different section in which the BlockWaste project website is divided and the links to each of these sections.

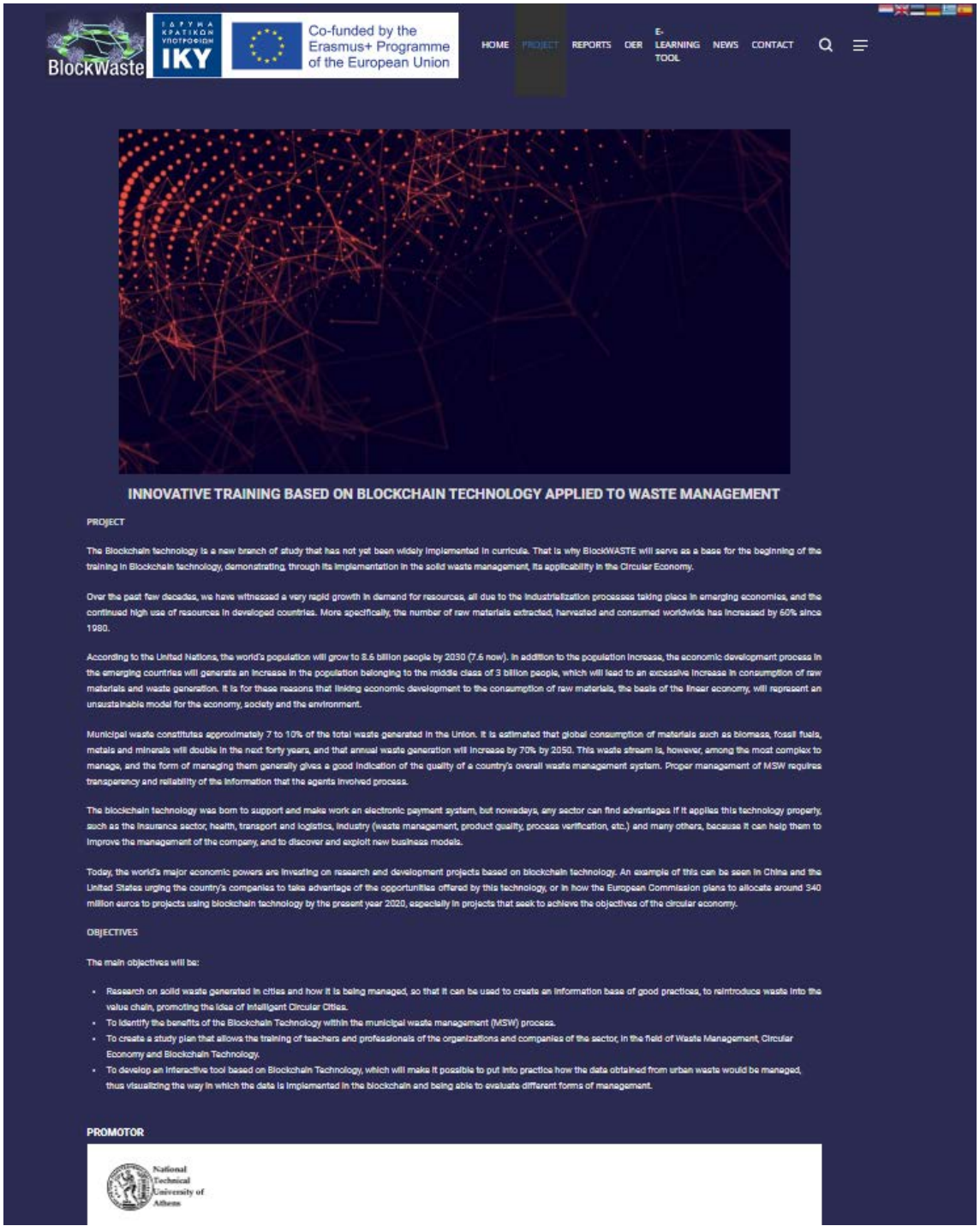
2.2.1 HOME

Link: https://blockwasteproject.eu/



2.2.2 PROJECT

Link: https://blockwasteproject.eu/project/



2.2.3 REPORTS

Link: https://blockwasteproject.eu/reports/

2.2.4 OER

Link: https://blockwasteproject.eu/oer/

Project code 2020-1-EL01-KA203-079154

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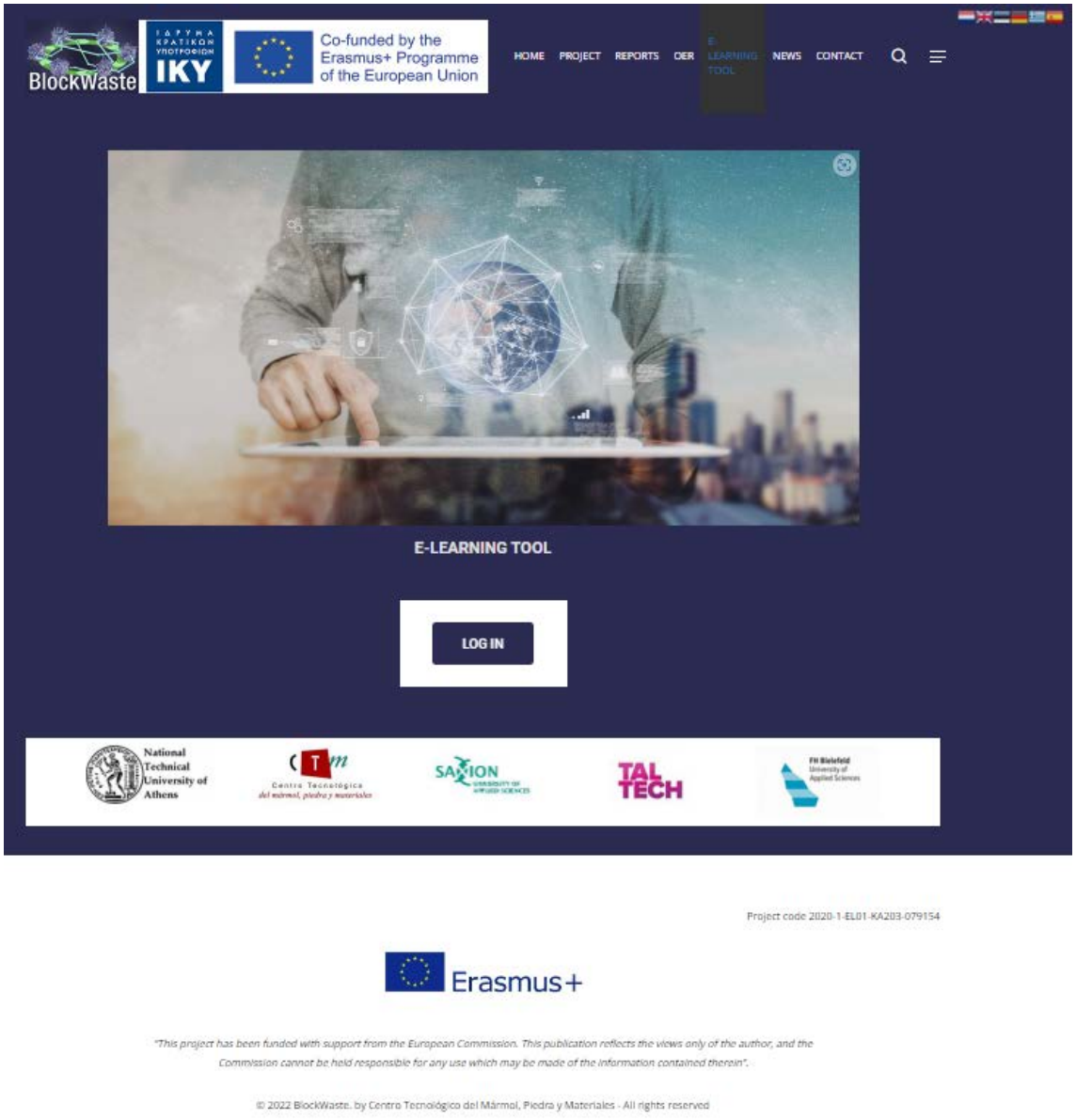
2.2.5 E-LEARNING TOOL

Link: https://blockwasteproject.eu/elearning-tool/



Project code 2020-1-EL01-KA203-079154

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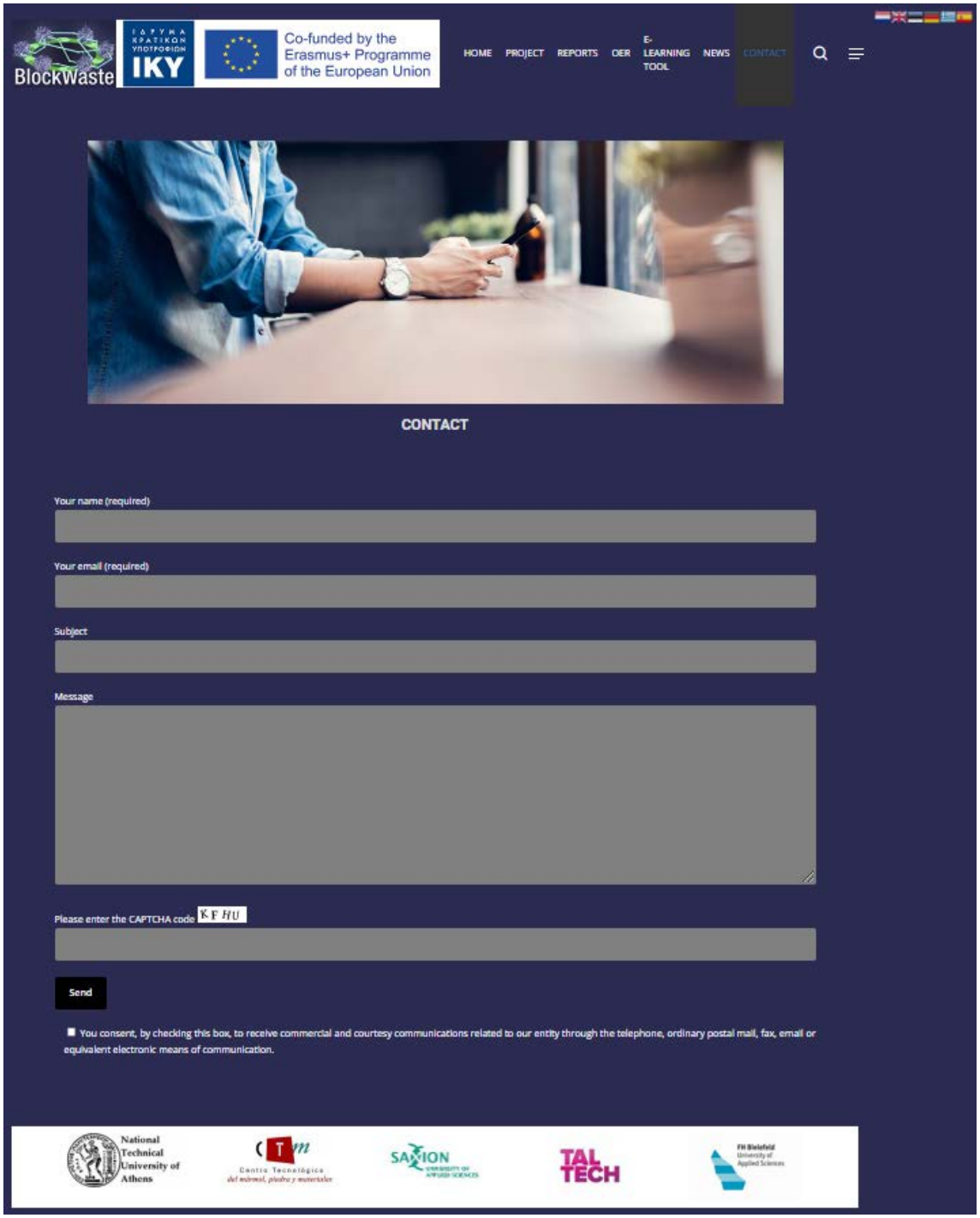
2.2.6 NEWS

Link: https://blockwasteproject.eu/news/

2.2.7 CONTACT

Link: https://blockwasteproject.eu/contact/



3 BlockWASTE Open Educational Resource (OER)

This Open Educational Resource was designed and produced to support the implementation of the BlockWASTE Course and Interactive BlockWASTE Tool. It is available for free on the project website for being used as a supporting material in the numerous courses.

The BlockWASTE OER is considered as one of the core tasks of the project and therefore need the special attention in its correct development and design. For that reason, CTM was the developer of this OER counting with the support and contribution of rest of partners.

3.1 Presentation of the BlockWASTE project

The OER of the BlockWASTE project is available in the link: https://blockwasteproject.eu/oer/

In order for this Open Educational Resource to contain all the information and contents of the project in an orderly and intuitive way for consultation, it was decided to divide it into as many sections as it contains different contents.

The different sections created were:

3.1.1 Direct access

Within the Direct access section , we can find 3 sub-sections, :

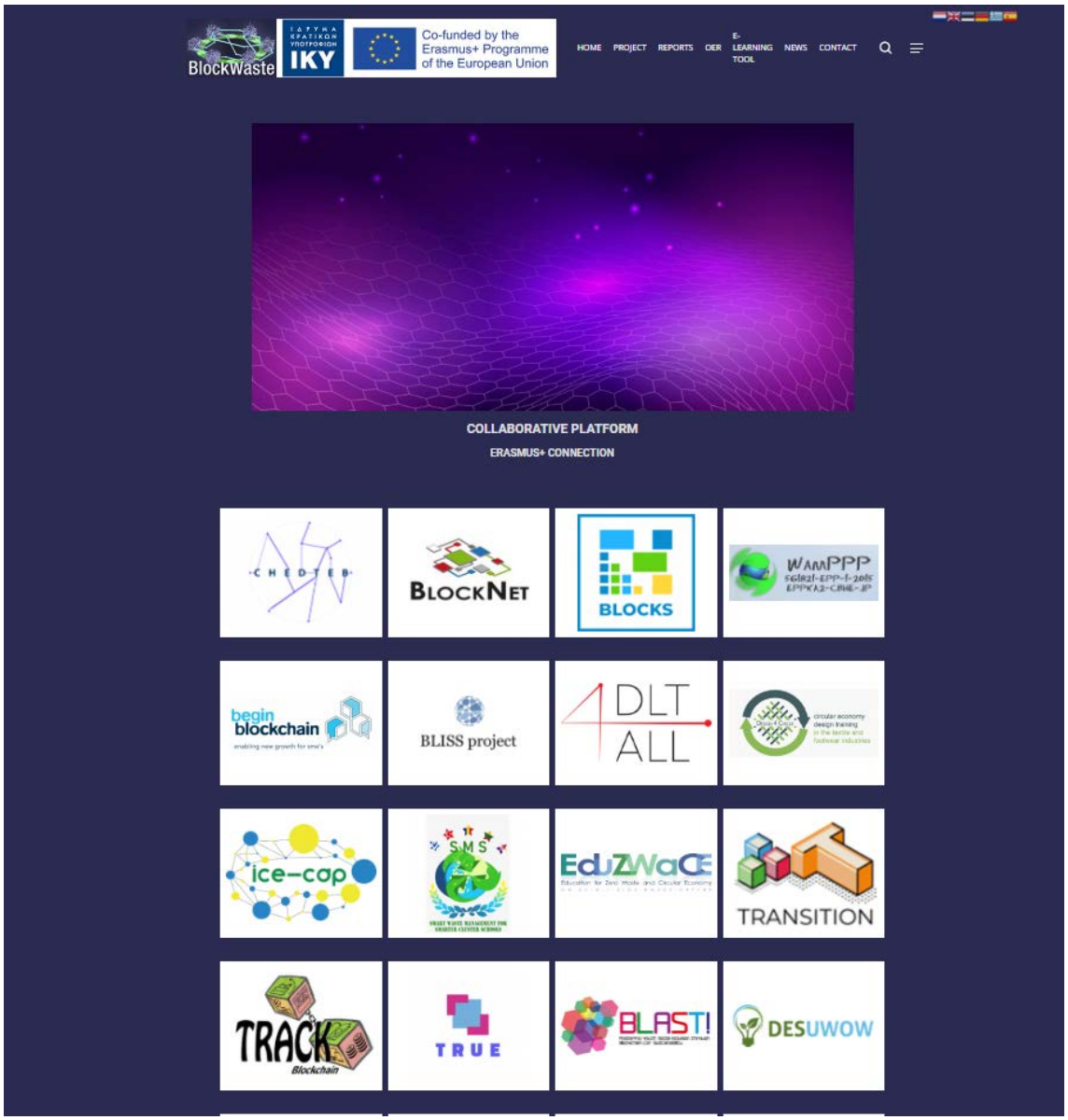
- **Regulations** (https://blockwasteproject.eu/oer/regulations/). This sub-section contains the documents that contain regulations related to the project's subject matter, be it blockchain, waste management or circular economy.

- **Technical documents** (https://blockwasteproject.eu/oer/technical-documents/). In this sub-section we can find the reports of the different tasks of the BlockWASTE project.

- **Dissemination** (https://blockwasteproject.eu/oer/dissemination/). In this last sub-section, you can view the report of the dissemination actions that have been carried out for the BlockWASTE project.

3.1.2 Collaborative Platform

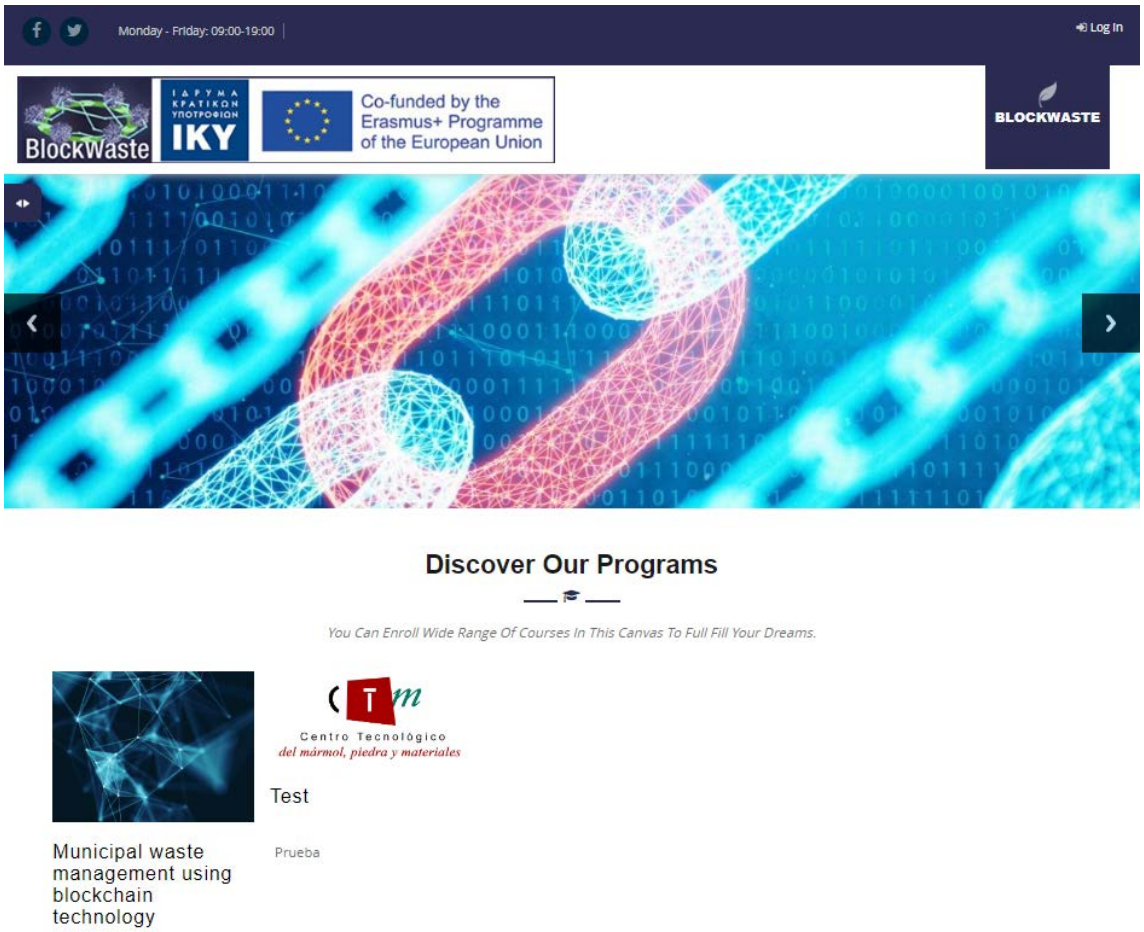
The Collaborative Platform hosted within the OER, (https://blockwasteproject.eu/oer/collaborative-platform/) showcases numerous projects related to the main topics of the project (waste management and blockchain) in order to establish synergies with other previous projects and to take advantage of the training materials that have been developed in those projects to be able to complement and extend the knowledge.



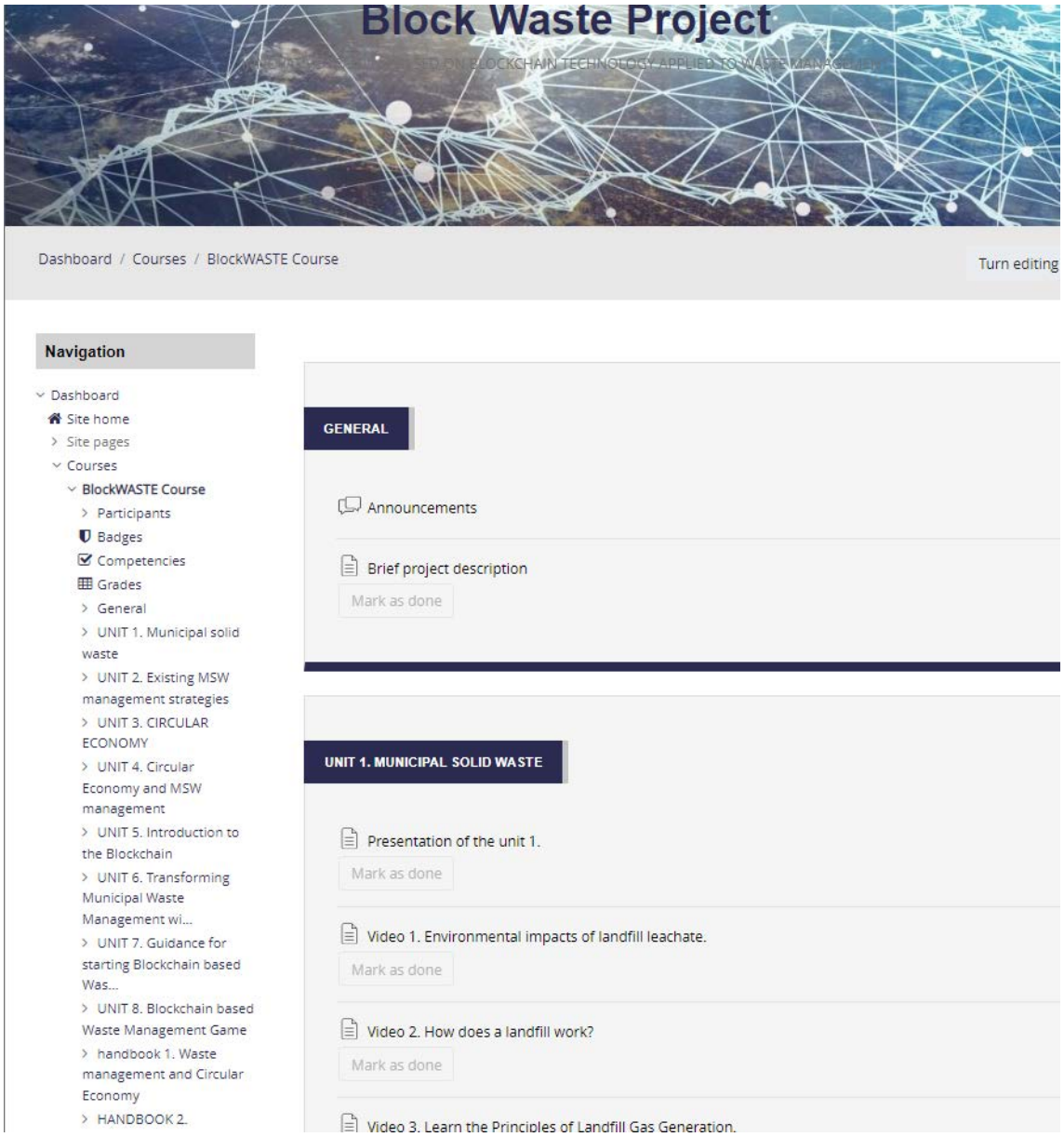
By clicking on the logos you can get more information on each of the projects and go to their website (if available).

3.1.3 MOOC

The MOOC (Massive Open Online Course), hosted by the OER (https://class.blockwasteproject.eu/), supports teachers and learners in the delivery of courses. It is a flexible learning modality as participants can access it from anywhere and at any time.



By accessing the programme "Municipal waste management using blockchain technology" we can see the materials created in the project, as well as complementary material (regulations, videos and related articles, etc.) for the expansion of users' knowledge.


Block Waste Project
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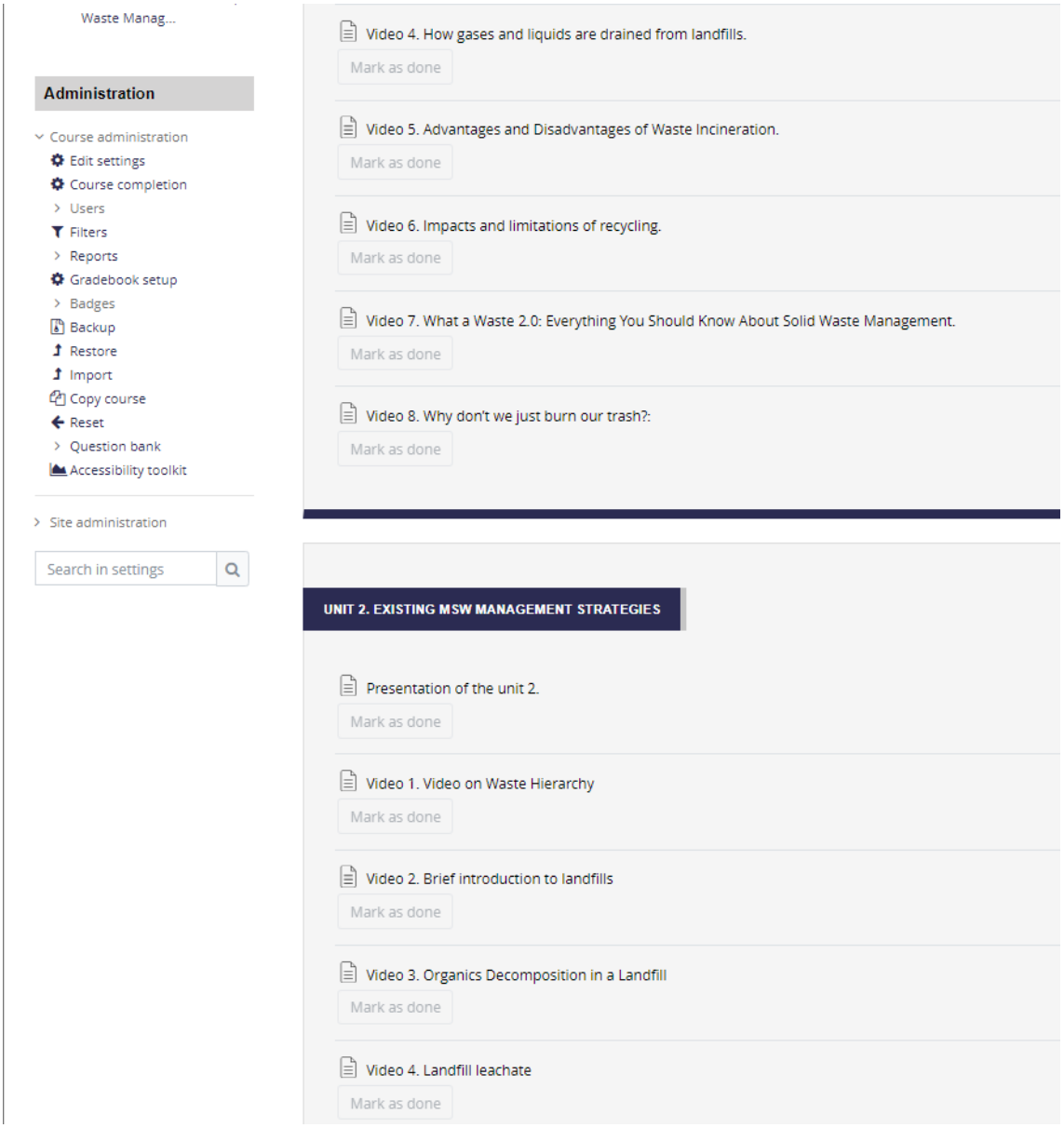
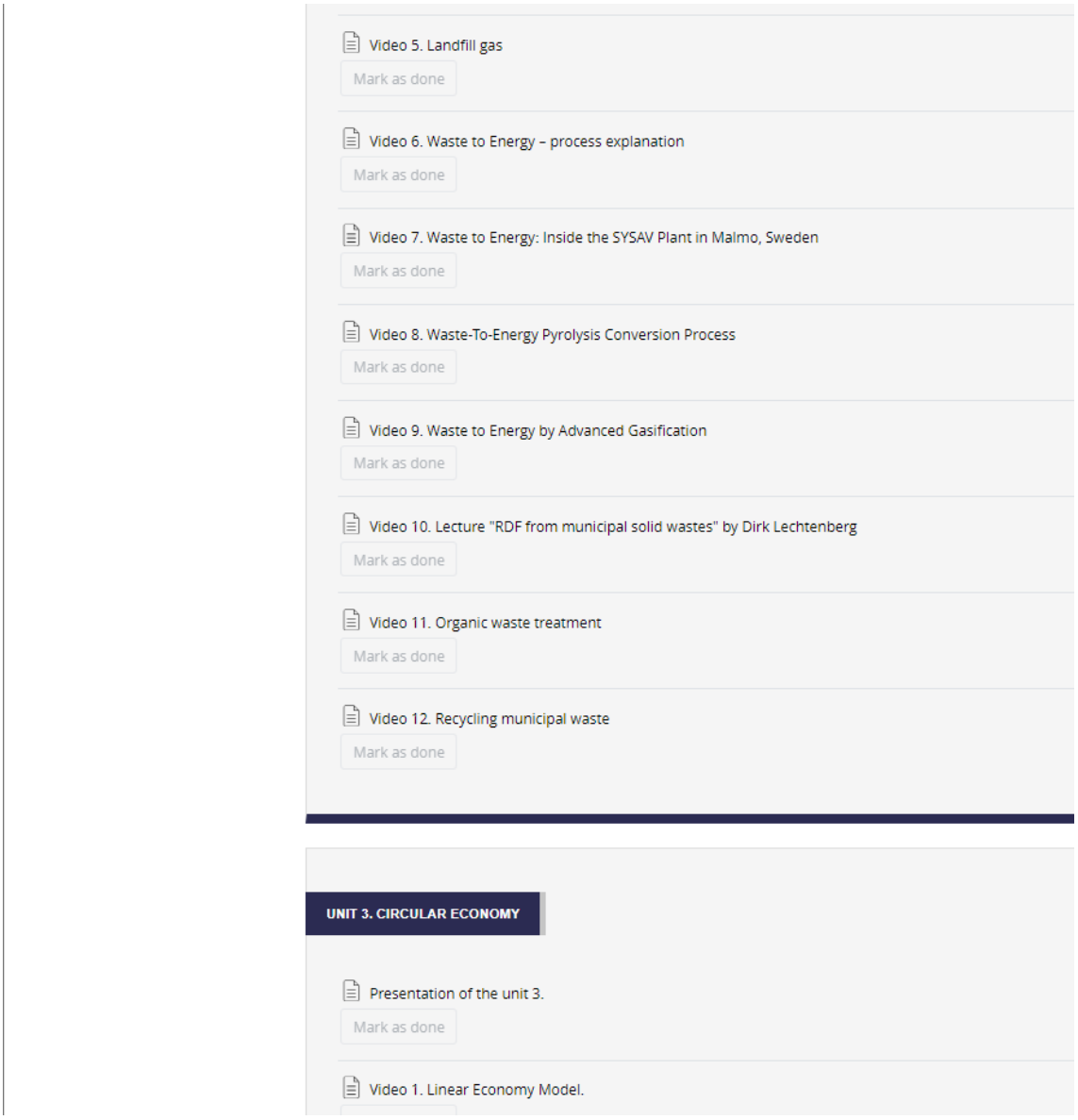
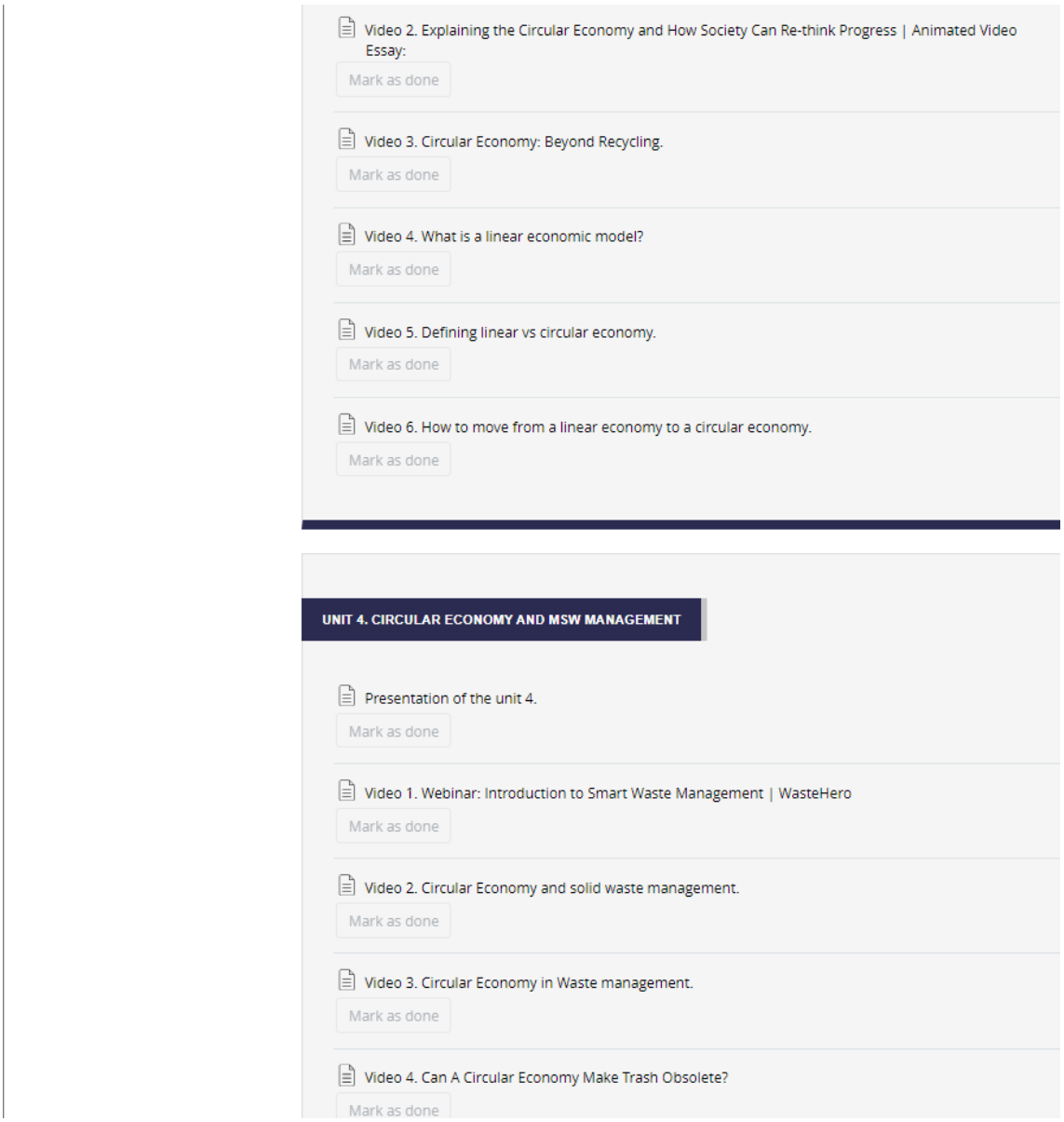
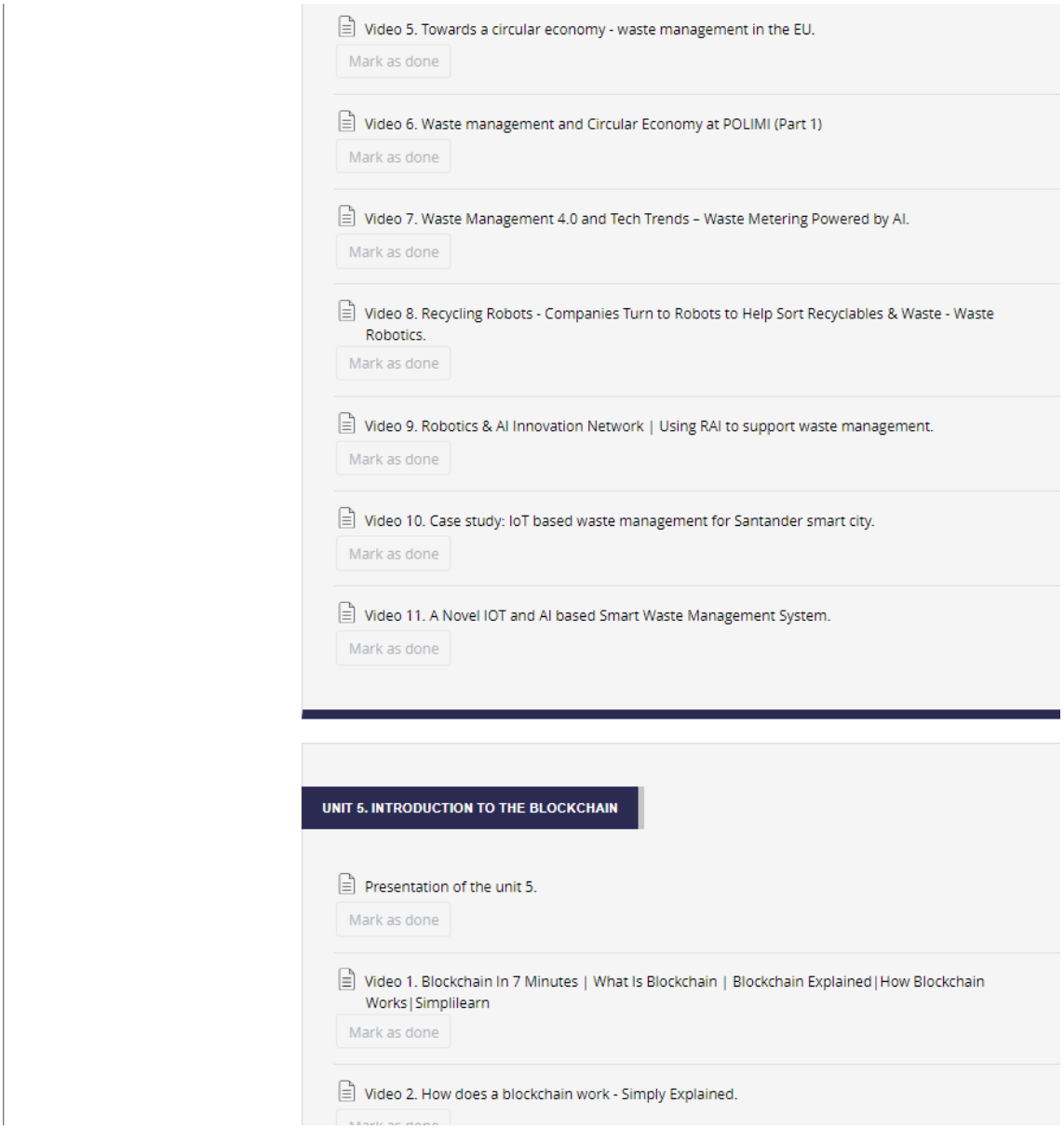
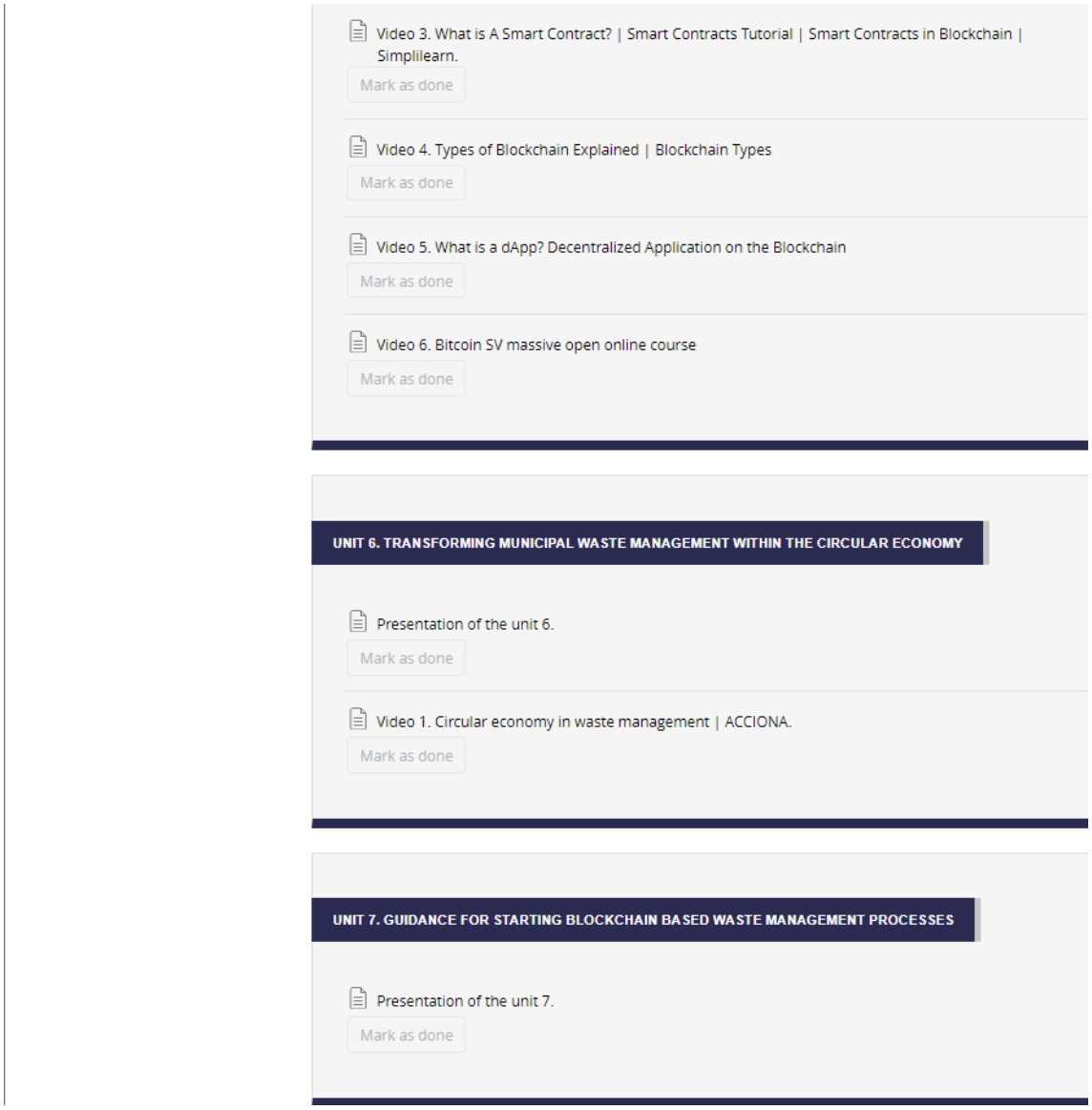
UNIT 3. CIRCULAR ECONOMY
UNIT 4. Circular Economy and MSW management
UNIT 5. Introduction to the Blockchain
UNIT 6. Transforming Municipal Waste Management wi...
UNIT 7. Guidance for starting Blockchain based Was...
UNIT 8. Blockchain based Waste Management Game
handbook 1. Waste management and Circular Economy
HANDBOOK 2.
GENERAL
Announcements
Brief project description
Mark as done
UNIT 1. MUNICIPAL SOLID WASTE
Presentation of the unit 1.
Mark as done
Video 1. Environmental impacts of landfill leachate.
Mark as done
Video 2. How does a landfill work?
Mark as done
Video 3. Learn the Principles of Landfill Gas Generation.

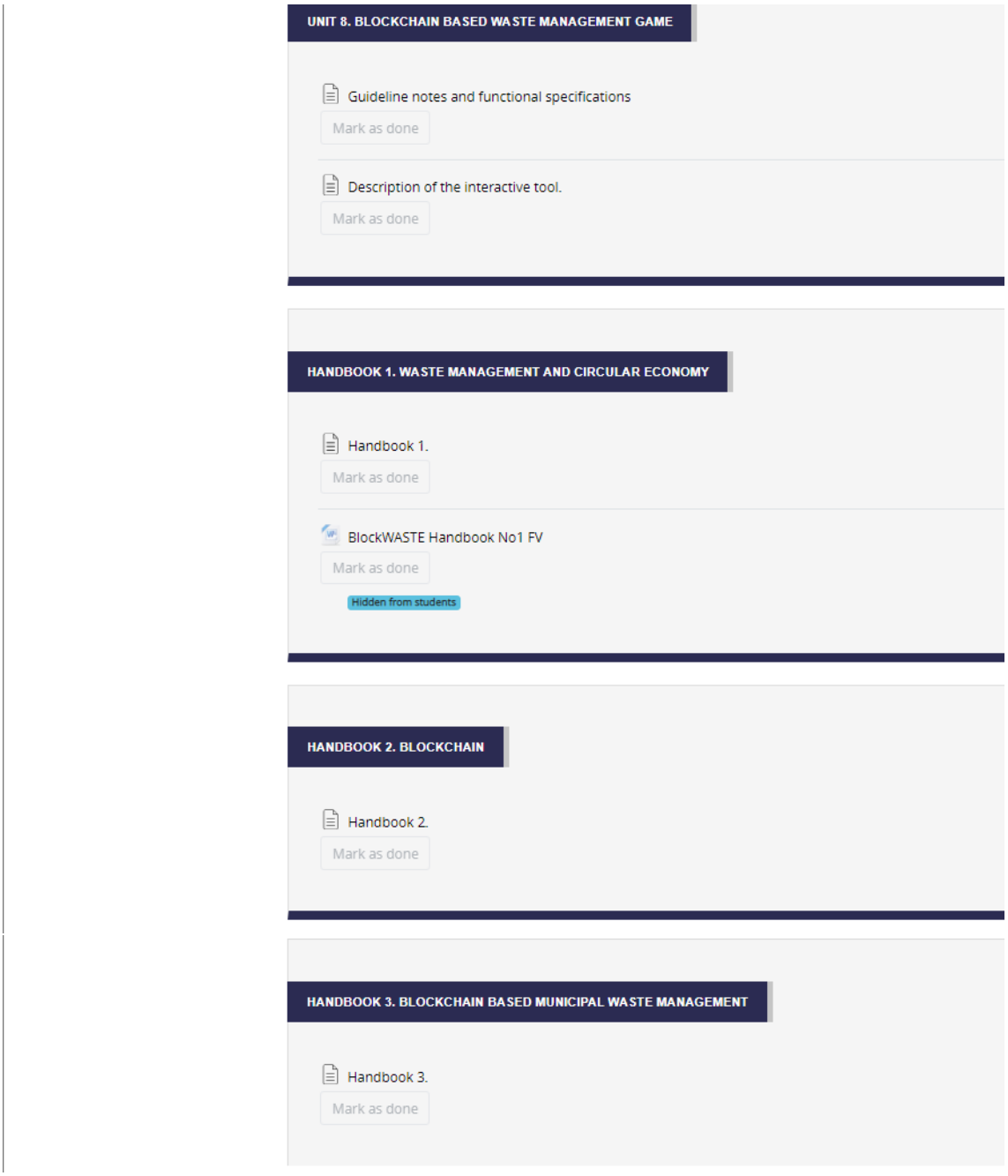

Waste Manag...
Administration
Course administration
Edit settings
Course completion
Users
Filters
Reports
Gradebook setup
Badges
Backup
Restore
Import
Copy course
Reset
Question bank
Accessibility toolkit
Site administration
Search in settings
Video 4. How gases and liquids are drained from landfills.
Mark as done
Video 5. Advantages and Disadvantages of Waste Incineration.
Mark as done
Video 6. Impacts and limitations of recycling.
Mark as done
Video 7. What a Waste 2.0: Everything You Should Know About Solid Waste Management.
Mark as done
Video 8. Why don't we just burn our trash?:
Mark as done
UNIT 2. EXISTING MSW MANAGEMENT STRATEGIES
Presentation of the unit 2.
Mark as done
Video 1. Video on Waste Hierarchy
Mark as done
Video 2. Brief introduction to landfills
Mark as done
Video 3. Organics Decomposition in a Landfill
Mark as done
Video 4. Landfill leachate
Mark as done


Video 5. Landfill gas
Mark as done
Video 6. Waste to Energy – process explanation
Mark as done
Video 7. Waste to Energy: Inside the SYSAV Plant in Malmo, Sweden
Mark as done
Video 8. Waste-To-Energy Pyrolysis Conversion Process
Mark as done
Video 9. Waste to Energy by Advanced Gasification
Mark as done
Video 10. Lecture "RDF from municipal solid wastes" by Dirk Lechtenberg
Mark as done
Video 11. Organic waste treatment
Mark as done
Video 12. Recycling municipal waste
Mark as done
UNIT 3. CIRCULAR ECONOMY
Presentation of the unit 3.
Mark as done
Video 1. Linear Economy Model.


Video 2. Explaining the Circular Economy and How Society Can Re-think Progress | Animated Video Essay:
Mark as done
Video 3. Circular Economy: Beyond Recycling.
Mark as done
Video 4. What is a linear economic model?
Mark as done
Video 5. Defining linear vs circular economy.
Mark as done
Video 6. How to move from a linear economy to a circular economy.
Mark as done
UNIT 4. CIRCULAR ECONOMY AND MSW MANAGEMENT
Presentation of the unit 4.
Mark as done
Video 1. Webinar: Introduction to Smart Waste Management | WasteHero
Mark as done
Video 2. Circular Economy and solid waste management.
Mark as done
Video 3. Circular Economy in Waste management.
Mark as done
Video 4. Can A Circular Economy Make Trash Obsolete?
Mark as done


Video 5. Towards a circular economy - waste management in the EU.
Mark as done
Video 6. Waste management and Circular Economy at POLIMI (Part 1)
Mark as done
Video 7. Waste Management 4.0 and Tech Trends – Waste Metering Powered by AI.
Mark as done
Video 8. Recycling Robots - Companies Turn to Robots to Help Sort Recyclables & Waste - Waste Robotics.
Mark as done
Video 9. Robotics & AI Innovation Network | Using RAI to support waste management.
Mark as done
Video 10. Case study: IoT based waste management for Santander smart city.
Mark as done
Video 11. A Novel IOT and AI based Smart Waste Management System.
Mark as done
UNIT 5. INTRODUCTION TO THE BLOCKCHAIN
Presentation of the unit 5.
Mark as done
Video 1. Blockchain In 7 Minutes | What Is Blockchain | Blockchain Explained | How Blockchain Works | Simplilearn
Mark as done
Video 2. How does a blockchain work - Simply Explained.


Video 3. What is A Smart Contract? | Smart Contracts Tutorial | Smart Contracts in Blockchain | Simplilearn.
Mark as done
Video 4. Types of Blockchain Explained | Blockchain Types
Mark as done
Video 5. What is a dApp? Decentralized Application on the Blockchain
Mark as done
Video 6. Bitcoin SV massive open online course
Mark as done
UNIT 6. TRANSFORMING MUNICIPAL WASTE MANAGEMENT WITHIN THE CIRCULAR ECONOMY
Presentation of the unit 6.
Mark as done
Video 1. Circular economy in waste management | ACCIONA.
Mark as done
UNIT 7. GUIDANCE FOR STARTING BLOCKCHAIN BASED WASTE MANAGEMENT PROCESSES
Presentation of the unit 7.
Mark as done



Users can work their way through the programme by reading the topics and playing the accompanying videos.

Dashboard / Courses / BlockWASTE Course / UNIT 1. Municipal solid waste / Presentation of the unit 1.

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        - Video 2. How does a landfill work?
        - Video 3. Learn the Principles of Landfill Gas Gene...
        - Video 4. How gases and liquids are drained from la...
        - Video 5. Advantages

Presentation of the unit 1.

Mark as done

Last modified: Monday, 6 June 2022, 9:20 AM

Dashboard / Courses / BlockWASTE Course / UNIT 1. Municipal solid waste / Video 1. Environmental impacts of landfill leachate.

Navigation

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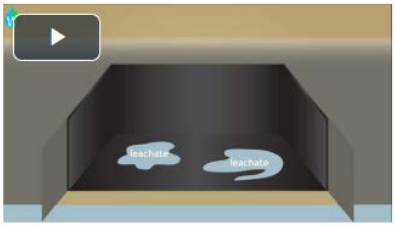
Video 1. Environmental impacts of landfill leachate.

Mark as done



Last modified: Wednesday, 25 May 2022, 8:20 AM

◄ Presentation of the unit 1. | Jump to... | Video 2. How does a landfill work? ►

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