IO3: In-service Training for VET Tutors
Learning unit 2 - by UPB and ISQ
21 hours of face to face learning
14 hours of self-directed materials

Green-4-Future
Greening the EntreComp Framework to Reconcile Economic
Development and Environmental Security

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Table of Contents

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<table>
<tr><td colspan="4" align="center">Title of the Learning Unit:
Meet the GreenEntreComp Framework?
Designed by: CALLIDUS and UPIT</td></tr>
<tr><td>**Aim of the Learning Unit**</td><td colspan="3">Aim of this Learning topic is to introduce the VET tutors with the new GreenEntreComp framework, and motivate them to use it in their activities.</td></tr>
<tr><td>**TOTAL Learning time of which:**</td><td>**Face-to-face learning**</td><td>**Of which Assessment** *(during the time trainees perform the F2F activities)*</td><td>**Self-directed learning**</td></tr>
<tr><td>35 hours</td><td>21 hours</td><td>120 min</td><td>14 hours</td></tr>
</table>

LEARNING OUTCOMES

On successful completion of this Learning Unit (LU), VET tutors will be able to:

Knowledge	
Knowledge	K.1.1. Present how GreenEntreComp Framework is built
	K.1.2. Describe Green Entrepreneurship and its importance
	K.1.3. Explain the rationale behind 'greening' the EntreComp Framework
Skills	S.1.1. Discuss the benefits of using GreenEntreComp Framework
	S.1.2. Analyse the impact of GreenEntreComp Framework in entrepreneurship business
	S.1.3. Interpret/describe in own words the descriptors of the GreenEntreComp Framework
	S.1.4. Compare positively GreenEntreComp Framework with EntreComp Framework
	S.1.5. Explain correctly to own trainees the descriptors of the GreenEntreComp Framework
	S.1.6. Use/apply efficiently the GreenEntreComp Framework in practice (in their professional activities)
	S.1.7. Design new 'green(er)' competences and develop their descriptors, for all levels
Competences (Attitudes and Values)	C.1.1. Motivate own trainees to use GreenEntreComp Framework
	C.1.2. Instruct own trainees about GreenEntreComp Framework
	C.1.3. Monitor own trainees when applying GreenEntreComp Framework in their entrepreneurial activities/business

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1. Business Models (definition, description, levers, examples)

Activity Code	Activity Title	Activity type (i.e. face-to-face learning or self-directed learning)	Learning Outcomes to be achieved through this activity	Learning Time for this activity
A1.1	**Business Models**	Face-to-face		165 min
Overview of Content	• developing new circular products or services • circular supplies • recycle, reuse and share • extending products' life • sharing platforms • product as a service • other methodologies (e.g., lean manufacturing)			

Content delivery methods (lecture, discussions, research, group work, EntreComp, etc.)

- brainstorm in larger groups to collect new ideas
- (small) group work/group puzzle to work out the differences between recycling, upcycling, downcycling.
- work in pairs for digital research on the platforms for joint use, criteria-led elaboration of the contents of the platforms with the help of a catalogue of questions
- elaboration of the chart product as a service, what do the students know about the use of a product? What happens in case of defects? What does service mean actually?

Didactic Materials Required (worksheet, charts, handouts, didactic video, except from books/manuals, mind maps, etc.)

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Assessment method

- creation of a portfolio of the collected work results, supplementary reflection on the development process
- definition check by means of a test
- oral examination, query of the most relevant contents of the respective learning area

References (if necessary)

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2. Circular Economy (definition, characteristics, principles)

Activity Code	Activity Title	Activity type (i.e. face-to-face learning or self-directed learning)	Learning Outcomes to be achieved through this activity	Learning Time for this activity
A1.4	**Circular Economy**	Face-to-face		
Overview of Content	● linear model of production and consumption ● CE Principles as opposed to the Linear Model ● CE Indicators ● CE policies and legislative framework			

Content delivery methods (lecture, discussions, research, group work, GreenEntreComp, etc.)
● collection of ideas in the Think-Pair-Share: What happens to the packaging of your products? What happens to the product when you no longer use it? What happens to our waste actually? ● (small) group work on different types of rubbish/residues that are disposed of, design of a chart for permanent display in the (class) room or on digital platforms ● brainstorm in large group with cluster or mind map: What other ways can you think of what we can do with our waste/leftover produce? Can we avoid the leftovers altogether? What are the advantages? ● criteria-led, digital elaboration of the legal framework and governmental measures in a group puzzle, with the help of a given overview

Didactic Materials Required (worksheet, charts, handouts, didactic video, excerpt from books/manuals, mind maps, etc.)

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Manufacturing

Use
(Reliability)

Reuse/
Repurpose

Remanufacture

Recycle

Recovery

Material
and
Product
Design

Waste

Resource Extraction

Linear economy

NATURAL RESOURCES — TAKE — MAKE — DISPOSE — WASTE

Technical & biological **materials** mixed up

Energy **from finite sources**

Circular economy

MAKE — CONSUME — ENRICH

MAKE — USE — RETURN

Biological materials — Technical materials

Energy **from renewable sources**

Circular economy monitoring framework

1 EU self-sufficiency for raw materials
The share of a selection of key materials (including critical raw materials) used in the EU that are produced within the EU

2 Green public procurement
The share of major public procurements in the EU that include environmental requirements

3a-c Waste generation
Generation of municipal waste per capita; total waste generation (excluding major mineral waste) per GDP unit and in relation to domestic material consumption

4 Food waste
Amount of food waste generated

7a-b Contribution of recycled materials to raw materials demand
Secondary raw materials' share of overall materials demand – for specific materials and for the whole economy

8 Trade in recyclable raw materials
Imports and exports of selected recyclable raw materials

5a-b Overall recycling rates
Recycling rate of municipal waste and of all waste except major mineral waste

6a-f Recycling rates for specific waste streams
Recycling rate of overall packaging waste, plastic packaging, wood packaging, waste electrical and electronic equipment, recycled biowaste per capita and recovery rate of construction and demolition waste

9a-c Private investments, jobs and gross value added
Private investments, number of persons employed and gross value added in the circular economy sectors

10 Patents
Number of patents related to waste management and recycling

Production and consumption

Waste management

Secondary raw materials

Competitiveness and innovation

• Specific regulations for product design to increase the product's circularity, e.g. related to preparation for reuse in terms of spare parts, product liability or design requirements, such as in the WEEE * Directive
• Regulations on disassembly of products
• Product standards can increase e.g. the modularity of product design
• Front-runner approaches based on product environmental footprint declarations

• Financial support for cleaner production initiatives
• Regulatory requirements with regard to internal closure of material loops or waste prevention requirements
• Extension of warranties, as this leads to more durable products
• Securing the availability of spare parts, to support the repair and remanufacture of second-hand products

PRODUCTION AND DISTRIBUTION

ECO-DESIGN

REUSE, REPAIR, REDISTRIBUTE, REFURBISH, REMANUFACTURE

CONSUMPTION AND STOCK

• Changing consumption patterns through, e.g. clarifying liability regulation for shared consumption
• Tax incentives for product-service systems
• Regulations on the provision of necessary infrastructures
• Product labels, consumer awareness campaigns

• Market restrictions for non-recyclable materials or products that are not yet sufficiently recycled
• Phasing out environmentally harmful subsidies for fossil-based fuels
• Fuel taxes to reduce transport distances
• Regional sourcing of raw materials, green public procurement guidelines

MATERIALS

RECYCLING

WASTE

• Financial incentives in the form of deposit schemes and reduced VAT
• Extended producer responsibility
• Technical regulations to improve the collection of discarded products
• Specific reuse targets and guaranteed access to discarded products for actors in the reuse sector

• Material extraction taxes
• Permitting processes that reduce unused extraction
• Targets based on indicators that include extraction

EXTRACTION OF RESOURCES

Note: * WEEE: Waste Electrical and Electronic Equipment.

Circular Economy Action Plan

For a cleaner and more competitive Europe

#EUGreenDeal

Assessment method

● submission of the work results as a portfolio ● presentation of the results of working in smaller groups in class
References (if necessary)
●

3. Schools of thought in Circular Economy

Activity Code	Activity Title	Activity type (i.e. face-to-face learning or self-directed learning)	Learning Outcomes to be achieved through this activity	Learning Time for this activity
A1.6	Schools of thought in Circular Economy	Face-to-face		
Overview of Content	- design out waste and pollution - keep products and materials in use - regenerate natural systems			

Content delivery methods (lecture, discussions, research, group work, GreenEntreComp, etc.)

- schools of thought in the inverted classroom, students collect ideas and research the different approaches using appropriate media (provided literature or online) depending on the age group
- learning stations followed by a questionnaire which includes the different approaches and a reflection on the students' personal preferences
- documentation task in the form of a portfolio over the period of the series of lessons on how the pupils deal with their own products, whether these are treated more carfully or care is taken when shopping to purchase more durable products

Didactic Materials Required (worksheet, charts, handouts, didactic video, excerpt from books/manuals, mind maps, etc.)

Literaturvorschläge:
- Walter R. Stahel, Routledge & CRC Press, 2019, The Circular Economy: A User's Guide
- EUA-Bericht Nr. 6/2017 Circular by design Produkte in der Kreislaufwirtschaft REUSE, REPAIR, EDISTRIBUTE, REFURBISH, REMANUFACTURE, ISSN 1977-8449, Verfügbar unter:
  https://circulareconomy.europa.eu/platform/sites/default/files/circular_by_design_-_products_in_the_circular_economy.pdf

Videos:

Ist dies die Zukunft der globalen Lebensmittelsysteme? Verfügbar unter:
https://www.youtube.com/watch?v=G-pr0cYzuDQ

Assessment method
- question catalogue based on the learning stations, added by a reflection task   - portfolio work of the documentation task, added by a reflection task (findings from the documentation and the more conscious handling of products)   - test on the schools of thought, their meanings and approaches to implementation
References (if necessary)

4. Criticism of circular Economy

Activity Code	Activity Title	Activity type (i.e. face-to-face learning or self-directed learning)	Learning Outcomes to be achieved through this activity	Learning Time for this activity
A1.7	**Criticism of Circular Economy**	Face-to-face		

Overview of Content	- materials have a limited lifespan (downcycling) - access to appropriately long-lasting resources is not necessarily available - participating in CE must be easy for customers - it must be easy for manufacturers to use sustainable raw materials - legal framework must be adapted across the board in order to be able to adapt to CE as a company - financial resources for conversion must be guaranteed

Content delivery methods (lecture, discussions, research, group work, GreenEntreComp, etc.)

- development in the plenary
- collect ideas with moderation cards so that ideas can be sorted and collected thematically

Didactic Materials Required (worksheet, charts, handouts, didactic video, excerpt from books/manuals, mind maps, etc.)

- No didactic materials needed, students develop their own materials

Assessment method

- Evaluation of the student's materials

References (if necessary)

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5. Examples of Business Models for Circular Economy

Activity Code	Activity Title	Activity type (i.e. face-to-face learning or self-directed learning)	Learning Outcomes to be achieved through this activity	Learning Time for this activity
A1.11	**Examples of Business Models for Circular Economy**	Face-to-face		

Overview of Content	● design for upgradeability and repair (modularity) ● design long-life products ● design for product-life extension ● design for closing resource loops ● design for technical and biological cycles ● design for disassembly and reassembly

Content delivery methods (lecture, discussions, research, group work, GreenEntreComp, etc.)

- teacher presentation as an example of a selected business model, followed by student presentations on further examples
- group work for individual examples
- learning stations for previously selected examples

Didactic Materials Required (worksheet, charts, handouts, didactic video, excerpt from books/manuals, mind maps, etc.)

Literature:
- European Comission, Sustainable Product Policy and Ecodesign. https://ec.europa.eu/growth/industry/sustainability/product-policy-and-ecodesign_en

- European Comission, Ecodesign and Energy Labelling, Directive 2009/125/EC and Regulation (EU) 2017&1369. https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/ecodesign_en

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- European Comission, Ecodesign your future – How ecodesign can help the environment by making products smarter, Report, https://op.europa.eu/pt/publication-detail/-/publication/4d42d597-4f92-4498-8e1d-857cc157e6db

Assessment method
● evaluation of the students' results/presentations

References (if necessary)

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6. Greening your Business

Activity Code	Activity Title	Activity type (i.e. face-to-face learning or self-directed learning)	Learning Outcomes to be achieved through this activity	Learning Time for this activity
A1.11	**Greening your Business**	Face-to-face		

Overview of Content	● benefits and barriers in implementing CE models in SMEs ● company Benefits ● consumer Benefits ● benefits for other stakeholders ● environmental benefits following the CE transition

Content delivery methods (lecture, discussions, research, group work, GreenEntreComp, etc.)

- group puzzle for each interest group
- prepared material so that learning outcomes are securely shared

Didactic Materials Required (worksheet, charts, handouts, didactic video, excerpt from books/manuals, mind maps, etc.)

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Save costs

Use less primary raw material to lower the level of exposure to price fluctuations.

Maximize the retained value from existing capital assets.

Rent equipment instead of buying.

Get funding

Get to know the different type of financial products: public equity funds, bonds, private market funds and banking..

Check the website of the EU to get information on funding programmes, such as Horizon Europe, or LIFE programme.

SUSTAINABLE DEVELOPMENT GOALS

17 SDG

17 PARTNERSHIP FOR THE GOALS

01 NO POVERTY	02 ZERO HUNGER	03 GOOD HEALTH AND WELL-BEING	04 QUALITY EDUCATION	05 GENDER EQUALITY
06 CLEAN WATER AND SANITATION	07 AFFORDABLE AND CLEAN ENERGY	08 DECENT WORK AND ECONOMIC GROWTH	09 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS			
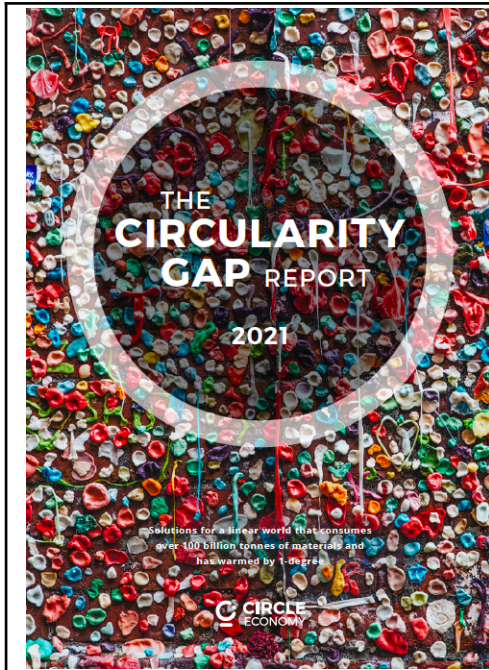
Assessment method

- exam for the individual interest groups and their advantages in the use of CE
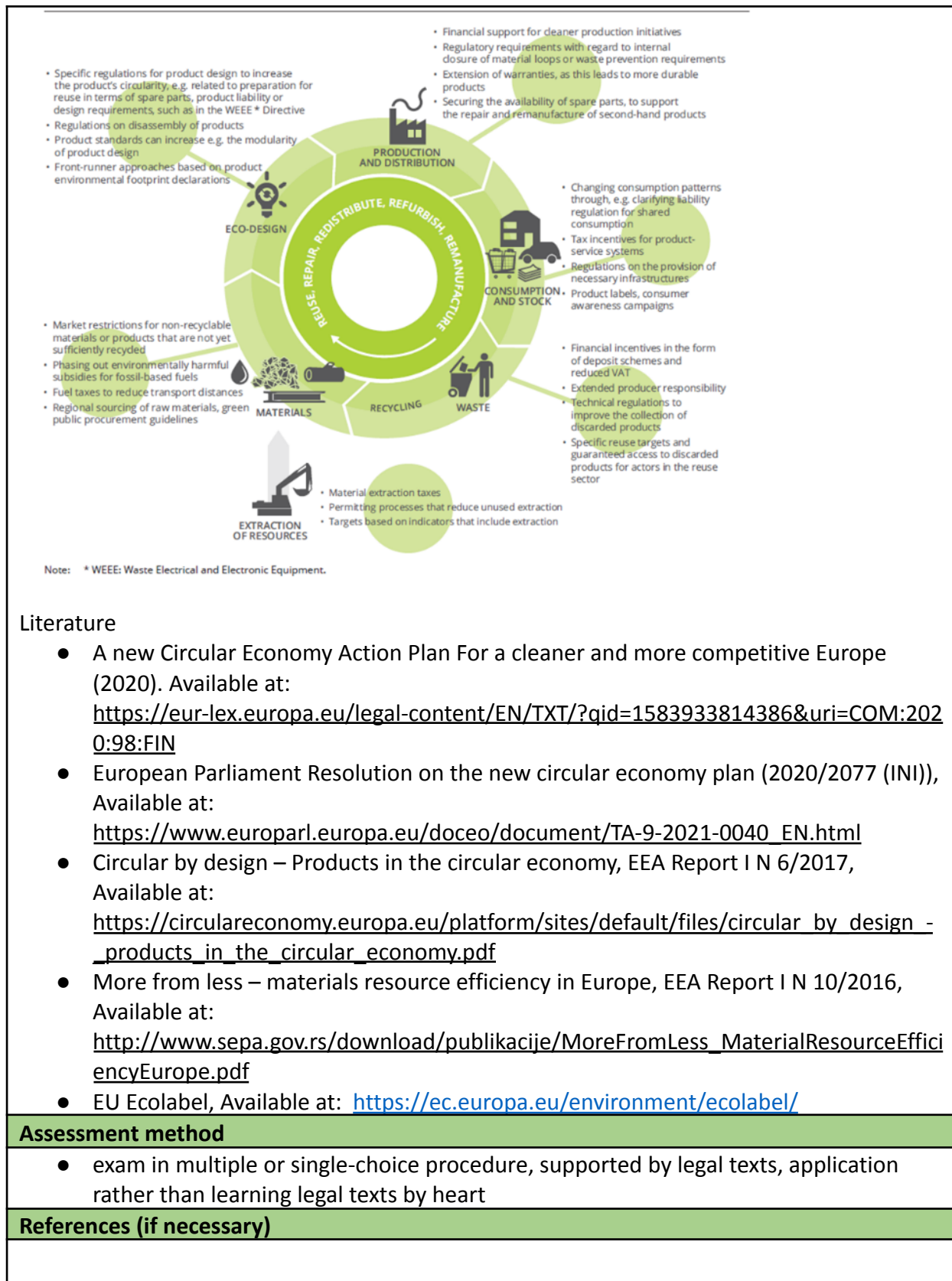
References (if necessary)

7. CE policies and legislative framework

Activity Code	Activity Title	Activity type (i.e. face-to-face learning or self-directed learning)	Learning Outcomes to be achieved through this activity	Learning Time for this activity
A1.11	**CE policies and legislative framework**	Face-to-face		

Overview of Content	● legal framework for CE in Europe ● possible political instruments for the circularity of products throughout the product life cycle

Content delivery methods (lecture, discussions, research, group work, GreenEntreComp, etc.)

- for legal basics, a lecture is suitable, contents must be looked at very closely here, a wide-ranging, independent research by the students can lead to gaps or incorrect results through interpretation, more guidance is needed here
- the basis is working with legal texts, this is not always given and can, depending on the age group, be rather difficult

Didactic Materials Required (worksheet, charts, handouts, didactic video, excerpt from books/manuals, mind maps, etc.)

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Note: * WEEE: Waste Electrical and Electronic Equipment.

Literature

- A new Circular Economy Action Plan For a cleaner and more competitive Europe (2020). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN
- European Parliament Resolution on the new circular economy plan (2020/2077 (INI)), Available at: https://www.europarl.europa.eu/doceo/document/TA-9-2021-0040_EN.html
- Circular by design – Products in the circular economy, EEA Report I N 6/2017, Available at: https://circulareconomy.europa.eu/platform/sites/default/files/circular_by_design_-_products_in_the_circular_economy.pdf
- More from less – materials resource efficiency in Europe, EEA Report I N 10/2016, Available at: http://www.sepa.gov.rs/download/publikacije/MoreFromLess_MaterialResourceEfficiencyEurope.pdf
- EU Ecolabel, Available at: https://ec.europa.eu/environment/ecolabel/

Assessment method

- exam in multiple or single-choice procedure, supported by legal texts, application rather than learning legal texts by heart

References (if necessary)

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