



## RE-START – Reinforcing the circular economy model for START-ups

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### Secondary Research Consolidated

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Prepared by **UBI**'s research team





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## Secondary Research

Partners created a comprehensive overview of the integration of circular economy in businesses at national and EU level that included an outline of the key components of efficient circular business models. Examples of trainings about circular businesses were selected and analyzed to identify common strategies and good practices drawing out strengths and weaknesses, challenges, and key success factors that promote circular economy.

Data gathered from the secondary research was analyzed to identify the extent to which circular economy has been integrated by businesses, the exact ways the circular economy strategies have been used (e.g., recycling, reusing, or remanufacturing) in national and EU level. This analysis will help partners to decide the content of the OERs.

## Results

The secondary research is divided into two parts. First, the analyses of the courses in each partner's country. Second, the national indexes concerning circular economy.

### 1<sup>st</sup> part (Courses)

The partners have compiled courses on circular economy, from basic trainings to PhD level. Below is the summary of the courses in each country. In the appendix there is a complete list with the courses and their main information.

### Cyprus

The training programs available in Cyprus are characterized by similarities such as the fact that most courses related with circular economy are elective/optional and, therefore, the students only choose these courses if they have a specific interest in the topic. Of course, this is not the case for the programs that are directly related to the circular economy. Most of the programs are implicated either in scientific research related to sustainability, and/or circular economy, or in the basics of this sector. Lastly, it



was noticed a lack of a program related exclusively with the entrepreneurial mindset and start-up initiation in circle economy.

### *Greece*

In Greece many opportunities are provided for training over circular economy, and at any level of education. For example, there are undergraduate and master's degrees in environmental engineering. Additionally, there are short courses focusing on environmental protection, waste management and recycling, and the transition to a circular model.

### *Poland*

There is a high number of trainings related to the circular economy. They are implemented by both State and private organizations. Undergraduate engineering courses have great diversity in teaching about the circular economy. At the graduate level, the focus is on the development of circular business models and the transition to circular economy. On the other hand, non-degree public courses are directed towards environmental labelling programs, while the short courses managed by private sector are focused on innovation for circularity. Overall, the short courses seem more oriented towards transition than to circular businesses creation.

### *Portugal*

Portugal has several courses on circular economy, from MOOCs to master's degrees, and in various fields, for example, management, engineering, and design. We note that all courses have requirements for participation. Moreover, the courses are mostly in the metropolitan regions of Lisbon and Porto. Therefore, indicating the need for developing specific courses also giving focus to the countryside. Additionally, the lack of a program exclusively related with the entrepreneurial mindset and start-up initiation in circle economy is clear.



## Spain

The key aspects and conclusions that arise in the analyzed training programs are as follows: (i) the framework at international level is used as a reference for the business orientation and there is an alignment with the European Green Pact and SDG strategy; (ii) there is an implementation of the CE principles at enterprise level. Thus, knowing is valorized, and it is a “must” to include real-life examples of how to integrate the circularity in the different steps and operational processes. Additionally, organizational culture is considered as a key value for identity and company branding.

### *1<sup>st</sup> part summary*

In all national reports, it is noted the urge of a specific training course related to the entrepreneurial mindset in circular economy. It is also highlighted the lack of open access short-term programs related to the European Green Pact and SDG strategy, trends and innovations in circular economy, circular economy business models and good practices and product design and implementation based on circular economy.



## 2<sup>nd</sup> part (Indexes)

The partners have compiled national data and indexes on circular economy, using Eurostat database. Below is the summary of the insights of each country.

### Cyprus

Cyprus lags in comparison to other European Countries in a lot of aspects regarding circular economy and sustainability with significant fluctuations over the years in crucial matters such as waste management and recycling. What is important though, is the fact that from 2018 onwards, the data changes and Cyprus demonstrates a significant increase in circular economy indexes and seems to reduce the waste production. This suggests that the collective attempts of the government, NGOs, society, and organizations gave some fruitful results.

### Greece

The picture of Greece's profile on sustainable and environmentally friendly development issues is mixed. The implementation of ESG (Environmental, Social, Governance) actions by Greek companies is being slow, while a fairly small percentage of Greek CEOs have integrated climate change into their risk management strategy. Thus, the sustainability of the Greek startup ecosystem needs, among other things, know-how, knowledge, tools, and methods, which will lead to the development of Greek startups with respect for the environment and will provide them with the appropriate means to achieve the much-desired scale up and expand their business horizons with greater stability.

Although the pace is slow, movement towards a more sustainable and circular Greece has been noted, and the numbers keep moving towards better. Greece has set a variety of milestones to be reached until 2030 inspired by the 17 Global Goals, known as Goals for Sustainable Development (SDG), set by the General Assembly of UN.



## *Poland*

Considering the Eurostat indicators presented, Poland performs satisfactorily in the pursuit of a circular economy when it comes to indicators of municipal waste generation, the level of private investment in the circular economy or the use of circular materials. Other indicators like recycling or patents perform unfavourably. Poland also shows low resource productivity, while exhibiting high material intensity. A picture is emerging of where action is required, and that is to increase recycling especially of electronic and electrical waste or batteries.

The introduction of a circular economy model represents a challenge for entrepreneurs. Small businesses face barriers in adapting to the trends. They are related to the costliness of solutions related to the introduction of the circular economy, but also the lack of sufficient knowledge. Therefore, the promotion and education of residents, as well as authorities at various levels, is so important.

## *Portugal*

Regarding the Portuguese index, there is a need for improvement in comparison with some EU countries, mainly regarding the use of recycled raw materials and the development of patents related to circular economy. Nevertheless, some other indicators have been improving over the years. Therefore, the country needs investments in research and development, in courses concerning intellectual property, and development of circular business.

## *Spain*

The draft of the Spanish Circular Economy Strategy was published in February 2018. The strategy itself includes a series of mechanisms for follow-up, monitoring and evaluating the Strategy with the aim of knowing the degree of implementation of the proposed measures. To this end, 17 indicators grouped into 7 categories are proposed (90% of these can be used by the private sector). The results indicate a good development in terms of a European comparison.



## Final Considerations

Data collected from the secondary research was analyzed and cross-validated to this consolidated report summarizing common themes and good practices of selected courses. In sum, some countries have more training courses than others, especially in higher education, with complete courses and not just optional subjects or short courses. Moreover, all countries are in the path to meet the European Union standards concerning the circular development.

At last, in the following pages there is the Appendix with the information on the national training programs.



## Appendix

Country	Training program name	Provider	Target Group	Certification Awarded	Duration	Website
Greece	Department of environmental engineering	University of Patras	Students	BSc With Integrated Master	5 Years	<a href="http://www.Env.Upatras.Gr/Index.Php/EI">http://www.Env.Upatras.Gr/Index.Php/EI</a>
	Sustainable management of environmental change and the circular economy	University of Thessaly	Students	MSc	1.5 Years	<a href="http://www.Prd.Uth.Gr/M_Smeccce/">http://www.Prd.Uth.Gr/M_Smeccce/</a>
	Green skills-circular economy	Merimna Institute Lifelong Learning Center	General - Business Oriented	Certificate of Training	2 Months	<a href="https://Merimnaseminars.Gr/Neo-Programma-Katartisis/Kykliki-Oikonomia/">https://Merimnaseminars.Gr/Neo-Programma-Katartisis/Kykliki-Oikonomia/</a>
	Circular economy: transition and strategies	University of West Attica	Students - Business Oriented	Certificate of Training With 5 ECTS	8 Weeks	<a href="https://Cycleco.Uniwa.Gr/">https://Cycleco.Uniwa.Gr/</a>
	Waste management: adaptation to the principles of circular economy	University of Aegean	Students - Business and Engineering Oriented	Certificate of Training	4 Months	<a href="https://E-Epimorfosi.Aegean.Gr/Programmata/Periballon/Wastemgmt280322/">https://E-Epimorfosi.Aegean.Gr/Programmata/Periballon/Wastemgmt280322/</a>
Spain	Qualified in circular economy	Circular Economy Institute	He Students, Professionals, Civil Servants,	Circular Economy Institute Certificate	30 Hours	* No Indicators * No Difference Depending the Industrial Sector * No Reference to New Technology
	Specialist in circular economy	Circular Economy Institute	3 Years of Experience		60 Hours	
	Circular economy coach	Circular Economy Institute	5 Years of Experience		120 Hours	
	Multisectoral strategy for the circular economy	Cantabria University	Companies and Interested People	Attendance Certification	25 Hours	* No Indicators * General Content * No Business Models. * No Life Cycle Analysis.
	Specialist course in social economy management	Escuela De Organización Industrial	Managers and Freelancers	Attendance Certification	92 Hours	* No Differences in Implementation Depending on The Industrial Sector. * No Reference to New Technology
	Zero waste in the framework of the circular economy	Aenor	Entrepreneurs, Managers, Environmental Managers, Technicians, Consultants, Environmental Advisors, Students	Attendance Certification	10 Hours	* No Circular Business Models * No Case Studies * No Indicators
	Master's degree in circular economy	Valencia International University	University Degree	Master's degree	60 ECTS	* Not Enough Information Available



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	and sustainable development					from Web Page. *
Poland	Faculty of civil and environmental engineering	Rzeszow Polytechnic University	Students	Bachelor's degree/master's degree	4,5/5 Years	<a href="https://Wbisia.Prz.Edu.Pl/Studia/Inzynieria-Srodowiska">https://Wbisia.Prz.Edu.Pl/Studia/Inzynieria-Srodowiska</a>
	Business strategies in a closed-circle economy	Agh University of Science and Technology	Owners and Employees of Economic Entities, Senior and Middle Managers, Non-Governmental Organizations, Employees of Administration at Various Levels, Consumers Interested in New Economic Models	University Degree	1 Year	<a href="http://www.Goz.Zarz.Agh.Edu.Pl/Program-Studiow/">http://www.Goz.Zarz.Agh.Edu.Pl/Program-Studiow/</a>
	Innovations in circular economy - environmental labels and declarations'	Rzeszow Polytechnic University	Students, Graduated, Enterprises, Public Institutions	Certificate of Training	22 Hours	<a href="https://Csp.Prz.Edu.Pl/Kursy-I-Szkolenia/Environmental-Labeling-In-Circular-Economy">https://Csp.Prz.Edu.Pl/Kursy-I-Szkolenia/Environmental-Labeling-In-Circular-Economy</a>
	Innovation through the circular economy	Ey Academy of Business	Managers, Leaders of Organizations, Members of Teams Creating Innovation Strategies or Developing Innovative Products and Services	No Information Provided	2 Days	<a href="https://www.Academyofbusiness.Pl/Trainings/Innowacje_Obieg_Zamkniety/">https://www.Academyofbusiness.Pl/Trainings/Innowacje_Obieg_Zamkniety/</a>
	Specialist in circular economy of plastic packaging	The Program is Funded by the EU Under the Erasmus + KA2 Packalliance Project	Students	No Information Provided	7 Months	<a href="https://www.Packall.Eu/Program-Szkoleniowy/?Lang=Pl">https://www.Packall.Eu/Program-Szkoleniowy/?Lang=Pl</a> <a href="https://E-Epimorfosi.Aegean.Gr/Programmata/Periballon/Wastemgmt280322/">https://E-Epimorfosi.Aegean.Gr/Programmata/Periballon/Wastemgmt280322/</a>
Cyprus	Civil engineering	Frederick University	Undergraduate Students	Bachelor Of Science	4 Years	<a href="https://www.Frederick.Ac.Cy/School-Of-Engineering-Undergraduate-Programs/Bsc-In-Civil-Engineering">https://www.Frederick.Ac.Cy/School-Of-Engineering-Undergraduate-Programs/Bsc-In-Civil-Engineering</a>
	Civil engineering	University of Cyprus	Undergraduate Students	Bachelor of Science	4 Years	<a href="#">Water Resource Management, Wastewater Management, Transport Processes in Environmental Engineering</a>
	Environmental Science and Technology	University of Cyprus	Undergraduate Students	Bachelor of Science	4 Years	<a href="https://www.Cyf.Ac.Cy/Faculties/Gem/Est/Degrees/Undergraduate-Programmes/Est-Ug/">https://www.Cyf.Ac.Cy/Faculties/Gem/Est/Degrees/Undergraduate-Programmes/Est-Ug/</a>
	Natural gas in energy transition	University of Cyprus	Postgraduate Students	Master of Science	1 Years	<a href="https://www.Ucy.Ac.Cy/Cee/Programmes-Of-Study/Postgraduate-">https://www.Ucy.Ac.Cy/Cee/Programmes-Of-Study/Postgraduate-</a>





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						<a href="#">Programmes/Master-In-Natural-Gas-In-Energy-Transition/</a>
Civil engineering	University of Cyprus	Postgraduate Students	Master of Science	1 Years		<a href="https://www.ucy.ac.cy/cee/programmes-of-study/postgraduate-programmes/msc-in-civil-engineering/">https://www.ucy.ac.cy/cee/programmes-of-study/postgraduate-programmes/msc-in-civil-engineering/</a>
Civil engineering	University of Cyprus	Postgraduate Students	Master of Engineering	1 Years		<a href="https://www.ucy.ac.cy/cee/programmes-of-study/postgraduate-programmes/msc-in-civil-engineering/">https://www.ucy.ac.cy/cee/programmes-of-study/postgraduate-programmes/msc-in-civil-engineering/</a>
Energy technologies and sustainable design	University of Cyprus	Postgraduate Students	Master of Science	1 Years		<a href="https://etsd.ucy.ac.cy/en/general-information/">https://etsd.ucy.ac.cy/en/general-information/</a>
Energy technologies and sustainable design	University of Cyprus	Postgraduate Students	Master of Engineering	1 Years		<a href="https://etsd.ucy.ac.cy/en/general-information/">https://etsd.ucy.ac.cy/en/general-information/</a>
Sustainable energy systems	Frederick University	Postgraduate Students	Master of Science	1 Years		<a href="https://www.frederick.ac.cy/school-of-engineering-postgraduate-programs/msc-in-sustainable-energy-systems">https://www.frederick.ac.cy/school-of-engineering-postgraduate-programs/msc-in-sustainable-energy-systems</a>
Education for sustainable development and social change	Frederick University	Postgraduate Students	Master of Engineering	1 Years		<a href="https://www.frederick.ac.cy/school-of-education-and-social-sciences-postgraduate-programs/msc-in-education-for-the-environment-and-sustainable-development">https://www.frederick.ac.cy/school-of-education-and-social-sciences-postgraduate-programs/msc-in-education-for-the-environment-and-sustainable-development</a>
Business administration	UCLAN	Postgraduate Students	MBA	1 Years		<a href="https://www.uclancyprus.ac.cy/school/school-of-business-and-management/">https://www.uclancyprus.ac.cy/school/school-of-business-and-management/</a>
Environmental impact assessment and sustainability management	Neapolis University	Postgraduate Students	Master of Science	1,5 Years		<a href="https://www.nup.ac.cy/msc-in-environmental-impact-assessment-and-sustainability-management-eiasm/">https://www.nup.ac.cy/msc-in-environmental-impact-assessment-and-sustainability-management-eiasm/</a>
Master in green & digital management:	The Cyprus International Institute of Management	Postgraduate Students	Master of Science	1,5 Years		<a href="https://www.ciim.ac.cy/msc-green-digital-management/programme-details/">https://www.ciim.ac.cy/msc-green-digital-management/programme-details/</a>
Sustainable energy systems	Open University of Cyprus	Postgraduate Students	Master of Science	1 Years		<a href="https://www.ouc.ac.cy/index.php/el/studies/programmes/master/master-ses">https://www.ouc.ac.cy/index.php/el/studies/programmes/master/master-ses</a>
Ph.D. In energy, environment and atmospheric sciences	Cyprus Institute	Postgraduate Students	Doctoral Degree	4 Years		<a href="https://www.phdstudies.com/ph.d.-in-energy-environment-and-atmospheric-sciences/cyprus/the-cyprus-institute/">https://www.phdstudies.com/ph.d.-in-energy-environment-and-atmospheric-sciences/cyprus/the-cyprus-institute/</a>
PhD in the department of agricultural	Cyprus University of Technology	Postgraduate Students	Doctoral Degree	4 Years		<a href="https://www.cut.ac.cy/faculties/gem/abf/degrees/phd-">https://www.cut.ac.cy/faculties/gem/abf/degrees/phd-</a>





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	sciences, biotechnology and food science					Studies/?Languageid=1
	Introduction to circular economy, its principles and the drivers of change	Cyprus Circular Economy Network	Training Course	/	/	Https://Cypruscircular.Org.Cy/
	Packaging in the circular economy series	Cyprus Circular Economy Network	Training Course	/	/	Https://Cypruscircular.Org.Cy/
	Construction sector and the circular economy series – episode 1	Cyprus Circular Economy Network	Training Course	/	/	Https://Cypruscircular.Org.Cy/
	Plastics in the circular economy series	Cyprus Circular Economy Network	Training Course	/	/	Https://Cypruscircular.Org.Cy/
Portugal	Post-Graduation Course in Circular Economy - Environment as a Sustainability Factor	Faculty Of Engineering , Universidade Lusófona	It Is aimed at holders of a bachelor's degree or legal equivalent, or at candidates with an academic,	Post-Graduation	220h	https://www.ulusofona.pt/pos-graduacoes/economia-circular-ambiente-como-fator-de-sustentabilidade
	Circular economy	Faculty of Engineering , Universidade do Porto	2nd cycle student of a higher education institution in the field of engineering, management, economics, design and law, or market	Ongoing Education	162h	https://sigarra.up.pt/feup/pt/cur_geral.cur_view?pv_curso_id=16141
	Blue & circular economy	Politécnico de Leiria	Holders of a degree or equivalent, in biology, biotechnology, marine sciences, economics, management, engineering, tourism, and related areas;	Master's Degree	643h	https://www.ipleiria.pt/curso/economia-azul-e-circular/
	Masters in design for Circular Economy	Instituto Superior Manuel Teixeira Gomes, Ensino Lusófona	Holders of a bachelor's degree or legal equivalent	Master's Degree	660h	https://www.ismat.pt/ensino/mestrados/mestrado-em-design-para-a-economia-circular.html?gclid=CjwKCAjw5NqVBhAjEiwAeCa97TjNqDjCbJnvr_deySN8UJL5LnFnMeC-Qu2zAD7chynxF6AjM4PSpxoCZT8QAvD_BwE
	MOOC - circular economy 101	Instituto Superior Técnico, Universidade de Lisboa	College students with any basic education	Participation Certificate	40h	https://tecnico.ulisboa.pt/pt/noticias/mooc-tecnico-economia-circular/

