Key Entry Points of the Circular Economy in State Policy for Enabling Innovative High-Growth Enterprises in the SPECA Sub-Region[1]

I. Introduction

1. The United Nations Environmental Assembly defines a circular economy as "one of the current sustainable economic models, in which products and materials are designed in such a way that they can be reused, remanufactured, recycled or recovered and thus maintained in the economy for as long as possible[2], along with the resources of which they are made, and the generation of waste, especially hazardous waste, is avoided or minimized, and greenhouse gas emissions are prevented or reduced.

2. In April 2021, the United Nations Economic Commission for Europe (UNECE) dedicated its sixty-ninth session to the promotion of a circular economy and sustainable use of natural resources in the UNECE region. National governments in the pan-European region, including those in the SPECA-subregion, are increasingly pursuing circular economy goals with the support and guidance of the UNECE. SPECA countries that are UNECE member States (Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) are committed to the circular economy and to collaboration within the region regarding the mitigation of climate change.[3] Countries emphasize the need for responsible utilization of water and energy resources, integration of trade, transportation, and connectivity advancements with the aim of promoting a green, circular, and inclusive post-pandemic economy, and the crucial role of innovation.

3. Following the Third Session of the SPECA Working Group on Innovation and Technology for Sustainable Development in July 2022[4], SPECA participating States decided[5] that the outcomes of the sixty-ninth and seventieth UNECE Commission sessions will be reflected in the implementation of the Action Plan of the SPECA Innovation Strategy for Sustainable Development to support circular economy, and green and digital transformation in the SPECA subregion.

4. Although a supportive policy environment for the green economy is in place in most SPECA participating States, further steps are needed to fully unfold a transition to circular economy practices. Managing this transition requires a comprehensive

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[1] Drafted by Ms. Anastasia Pankova, International Consultant, UNECE.

[2] United Nations, Turning to sustainable global business: 5 things to know about the circular economy, 13 June 2021. Available at https://news.un.org/en/story/2021/06/1093802#:~:text=Whilst%20there%20is%20no%20universally%20agreed%20definition%20of,in%20the%20economy%20for%20as%20long%20as%20possible%E2%80%9D.

[3] UNECE, Tashkent meetings breathe new air into SPECA by bolstering sustainable connectivity for a greener, circular and inclusive economy, November 2021. Available at: https://unece.org/media/SPECA/press/362305

[4] ESCAP, the Third Session of the SPECA Working Group on Innovation and Technology for Sustainable Development, 20 July 2022. Available at https://www.unescap.org/events/2022/third-session-speca-working-group-innovation-and-technology-sustainable-development

[5] UNECE, ESCAP, Report of the Third Session of the SPECA Working Group on Innovation and Technology for Sustainable Development, 20 July 2022. Available at https://www.unescap.org/sites/default/d8files/event-documents/D12a-Report-E_0.pdf

approach and a well-developed innovation ecosystem, where both the private and public sectors have critical roles to play.

5. This note presents policy options on how countries in the SPECA sub-region[6] can support start-ups, small and medium-sized enterprises to become innovative high-growth enterprises (IHGEs) with circular economy business models. It provides a general discussion supplemented by examples of successful case studies, in order to raise awareness among SPECA policymakers of existing practice contributing to the circular economy through innovation policy.

6. The note is based on findings and recommendations of the UNECE Policy Handbook on Supporting Innovative High-Growth Enterprises in the SPECA sub-region[7]. It also builds on extensive range of activities[8] that UNECE has been implementing since 2019 to accelerate the transition to a circular economy and sustainable use of natural resources in accordance with the decisions of its sixty-ninth session.

7. For the purposes of this note, IHGEs are firms that[9]:

a) Have an average annualized growth in the number of employees and/or revenue greater than 10 per cent over three years.

b) Have at least 10 employees at the beginning of their high-growth stage.

c) Engage in innovation, defined in a broad sense as any activity that involves new or significantly improved products or business processes, business models.

II. Innovation for the Circular Economy

8. A circular transition can help to make the economies of SPECA participating States more resilient by reducing negative environmental impacts, mitigating dependence on finite resources, and creating new business opportunities and jobs. The circular economy transition is impossible without innovation. As highlighted at the UNECE Team of Specialists on Innovation and Competitiveness Policies in November 2021[10], fully realizing the potential of innovation to aid this transition requires dedicated and sustained policy efforts to create enabling frameworks and incentives for private innovation in fields critical to a circular economy, as well as to encourage consumers to rapidly and broadly adopt innovative and sustainable consumption patterns.

9. The circular economy needs innovative solutions that transform industries through new materials, energy and ingredients alongside new business models, product designs,

[6] The United Nations Special Programme for the Economies of Central Asia (SPECA): Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

[7] UNECE Policy Handbook Supporting Innovative High-Growth Enterprises in the SPECA Sub-Region, March 2023. Available at: https://unece.org/info/Economic-Cooperation-and-Integration/pub/376568

[8] Economic commission for Europe, Progress report on the work of the Commission on the promotion of a circular economy and the sustainable use of natural resources, E/ECE/1507, 2 February 2023. Available at: https://unece.org/sites/default/files/2023-03/E_ECE_1507_ENG_0.pdf

[9] UNECE Policy Handbook Supporting Innovative High-Growth Enterprises in the SPECA Sub-Region, March 2023. Available at: https://unece.org/info/Economic-Cooperation-and-Integration/pub/376568

[10] UNECE, Thirteenth session of the Team of Specialists on Innovation and Competitiveness Policies, November 2021. Available at https://unece.org/economic-cooperation-and-integration/events/thirteenth-session-team-specialists-innovation-and-0

logistics and recovery solutions[11]. This will also require innovative approaches to regulation, to provide incentives and eliminate barriers systematically – trying out which approach works best and then scaling up and diffusing those that are successful across other sectors.[12]

10. IHGEs are instrumental in the transition to a circular economy. They will play a key role in endeavors to diversify the economies of SPECA countries, boost productivity and allow the economies to recover robustly from crises[13].

III. Key Circular Economy Entry Points for the Policy Toolkit to Foster IHGE in the SPECA Sub-Region

11. To promote sustainable economic growth in the SPECA sub-region and foster innovative and environmentally friendly practices, governments can initiate the following steps enabling IHGEs and redirecting entrepreneurship ecosystems in line with circular economy principles.

A. Foster a Pro-Growth Business Environment

12. Actions:

(a) Implement supportive policies and regulations that incentivize circular economy practices, such as tax incentives, grants, and subsidies for IHGEs.

(b) Promote entrepreneurship and innovation through incubators, accelerators, science and technology parks (STP), and start-up-friendly policies.

13. STPs have great potential to promote the circular economy by supporting entrepreneurship towards products and services with a circular impact. STPs unlock the potential of Fourth Industrial Revolution technologies (such as the internet of things, data analytics, robotics, and 3D printing) to accelerate the transition from a linear to a circular economy, both by creating a fertile environment for the development of new and more environmentally-friendly products and processes, as well as by improving production efficiency.[14] Tech parks and similar institutions are present throughout the SPECA sub-region. In Azerbaijan, for example, this approach was largely based on applying Western law to companies registered in the park and is linked to exempting them from all corporate taxes, including VAT and profit tax as well as customs duties. In Kazakhstan, Astana Hub - Technopark specializes in IT start-ups and provides several tax benefits for its residents.[15] STPs have the potential to play a catalytic role in digital transformation and technology transfer. However, as practice shows, this

[11] Cambridge Institute for Sustainability Leadership, Innovation for Sustainability: The driving force of circular economy start-ups, March 2023. Available at: https://www.cisl.cam.ac.uk/resources/publications/innovation-sustainability-driving-force-circular-economy-start-ups

[12] UNECE, Leveraging Innovation for the Circular Economy, Note by the Secretariat ECE/CECI/2022/3, 14 May 2022.

[13] UNECE. Policy Handbook "Supporting Innovative High-Growth Enterprises in the SPECA Sub-Region", March 2023. Available at: https://unece.org/info/Economic-Cooperation-and-Integration/pub/376568

[14] UNIDO, A New Generation of Science and Technology Parks: UNIDO's strategic approach to fostering innovation and technology for Inclusive and Sustainable Industrial Development, 2022. Available at https://sipp.unido.org/sites/default/files/knowledge/2022-08/English%20STP.pdf

[15] UNECE Policy Handbook Supporting Innovative High-Growth Enterprises in the SPECA Sub-Region, March 2023. Available at: https://unece.org/info/Economic-Cooperation-and-Integration/pub/376568

potential is held back by gaps in regulation, institutional capacities and firms' absorptive capacity. For example, the recent UNECE analysis indicates[16] that the benefits of the recently established STPs in Uzbekistan are not yet fully exploited, as regulatory frameworks for digital technologies are underdeveloped and personnel at STPs do not have sufficient expertise.

14. Business incubators and accelerators also have a strategic role in providing efficient support to their residents in elaborating profitable and at the same time socially and ecologically responsible business models. For example, Circular Disruptors Accelerators[17] at the Cambridge Institute for Sustainability Leadership (CISL) from the United Kingdom is an accelerator for early to growth stage start-ups seeking to scale their circular solutions, providing tailored business support and connecting cross industry leaders and circular experts. CISL's accelerator programmes are designed to support leading sustainability innovators, with new organisations and transformative business models that will decarbonise the economy, restore nature and create inclusive societies. Drawing on CISL's expertise and international network in sustainability, each accelerator programme is custom designed around one or more of ten sustainability themes, where innovation has an important role to play.

15. The Circular Economy Transition Incubator[18] from Switzerland enables teams and start-ups to prototype and develop solutions contributing to the transition towards the circular economy in Switzerland. During the program, selected entrepreneurs work on developing their minimum viable product (MVP) and validating their business models, with support from advisors, experts and the network of impact investors. For 12 weeks, the participants benefit from several elements of support that empower them to bootstrap an MVP and validate its market potential with customers. By the end of the program, the entrepreneurs should be able to stop looking at their start-up as a side-project and more as their full-time job. The support services provided by the incubator have a value 15.000 Swiss francs per team. The incubator has a zero equity and fees policy. This means that start-ups are not charged for their participation in the incubator and the idea they develop stays entirely in their ownership.

16. Accelerate2030[19] is a multi-stakeholder program initiated by Impact Hub Geneva, with the mission to scale the impact of entrepreneurial solutions for Sustainable Development Goals (SDGs). It aims to identify entrepreneurs from emerging economies who have proven and ready-to-scale solutions that contribute to achieving the SDGs, including the circular economy. The program provides these entrepreneurs with an individual scaling program at both national and global levels. Accelerate2030 brings together key organizations from the private and public sectors, international organizations, the financial community, and the philanthropic community. They all share a common goal of strengthening ecosystems and developing the necessary infrastructure to scale the innovative solutions. For example, Accelerate2030 provided

[16] UNECE, Innovation for Sustainable Development Review of Uzbekistan, March 2022. Available at https://unece.org/economic-cooperation-and-integration/publications/unece-innovation-sustainable-development-review

[17] Cambridge Institute for Sustainability Leadership, Homepage. Available at https://www.cisl.cam.ac.uk/work-with-us/accelerator-and-sustainability-hub/about-us

[18] Circular Economy Transition Incubator, Homepage. Available at https://www.cetransition.ch/en/incubator-2020

[19] Accelerate2030, Homepage. Available at https://accelerate2030.net

a support to a circular economy enterprise Biolive from Türkiye[20]. The company produces natural bioplastic granules made from olive seeds - olive waste produced during the oil-extraction process – in order to overcome environmental problems of plastic consumption, and to fulfil the deficiencies in the bio-plastic market.

17. The Circulars Accelerator[21] of the World Economic Forum is an action-oriented, six-month accelerator program for early- to growth-stage companies advancing the global transition to a more circular economy through innovation.

18. Google for Startups Accelerator: Circular Economy[22] serves top growth-stage start-ups with tailored technical, product, and leadership training from Google experts. It is a 10-week virtual accelerator program for technology start-ups and non-profit organizations. In addition to mentorship and project support on technical subjects like artificial intelligence and machine learning, geospatial, and Google Cloud, the Accelerator focuses on product design, customer acquisition, leadership development, expert-led circular economy deep dives, workshops, cutting-edge research, and leadership development. Each cohort comprises 10-15 organizations using technology to tackle circular economy challenges. These challenges include reuse, refill, recycling, composting, fashion, food, safe and circular materials, and the built environment. For example, the Accelerator programme recently supported California start-up Refiberd[23] – founded by a team of women engineers during the COVID-19 pandemic – uses a patent-pending AI and robotics-based recycling system to accurately sort textiles by material, including hard-to-separate fabric blends. Another example, Israeli start-up AgroScout[24] has developed a platform that uses AI to monitor crop development in real-time, to plan processing and manufacturing operations more accurately across regions, crops and growers. By utilizing AI technology, AgroScout detects pests and diseases early, allowing farmers to apply precise treatments that reduce agrochemical use by up to 85%.

19. UNECE has been supporting the governments of Central Asia in building the capacities of the staff of business incubators and accelerators to effectively perform their role, while also ensuring the exchange of good practices and fostering sub-regional cooperation in this area.[25] Based on this work, in July 2022, UNECE launched the SPECA Network of Incubators and Accelerators for Sustainable Development (NBIASD) which serves as a platform for dialogue and exchange on issues, challenges and solutions, as well as training on best practices related to innovative entrepreneurship support through business incubators and accelerators in the SPECA sub-region. NBIASD can serve a pilot UNECE platform to establish and strengthen the business support component of the innovative circular economy ecosystem in Central Asia (See Annex II, Roadmap on Development of Synergies Between the NBIASD and

[20] Accelerate 2030, Global finalist profile. Available at https://accelerate2030.net/bio-live/

[21] UpLink, The Circulars Accelerator '23, Homepage. Available at https://uplink.force.com/uplink/s/uplink-issue/a002o00000vOdvkAAC/the-circulars-accelerator-23

[22] Google for Startups Accelerators, Homepage. Available at https://startup.google.com/accelerator/circular-economy/

[23] Refiberd, Homepage. Available at https://refiberd.com/

[24] AgroScout, Homepage. Available at https://agro-scout.com/

[25] UNECE, Capacity building on innovation and competitiveness policies. Available at https://unece.org/capacity-building-innovation-and-competitiveness-policies

UNECE's stakeholder engagement network for the circular economy called "Circular STEP"). As part of this work, in May 2023 UNECE has launched[26] a capacity-building program on innovation for a circular economy in Uzbekistan in partnership with the Ministry of Higher Education, Science and Innovation.

B. Business Development Services for IHGEs

20. Actions:

(a) Provide specialized support services tailored to the needs of IHGEs, including business planning, market analysis, and access to networks and partnerships.

(b) Offer training programs and mentorship to help IHGEs navigate the circular economy landscape and develop sustainable business models.

(c) Create platforms or marketplaces that connect IHGEs with potential customers, suppliers, and investors.

21. Some countries and regions have succeeded in establishing an innovation ecosystem for the circular economy that provides an efficient support to a private sector and ensures cross-sectoral and cross-industry collaboration. For example, the Basque Country has developed the Circular Economy Innovation Programme[27] which aims to drive circular business opportunities for small and medium-sized enterprises (SMEs) through demonstration projects focused on regional priorities. Launched in 2017, the programme builds upon the insights gained from three earlier circular economy calls (2014-2016) and provides support for SMEs in establishing circular businesses. Each demonstration project facilitates a specific public-private dialogue involving SMEs and an inter-sectoral networking platform. This collaboration connects the outcomes of the projects to demand-driven instruments and formulates policy recommendations for the future. Implementation of innovative circular solutions within the Basque industry is expected to result in annual savings of 6 percent in raw material consumption, amounting to two billion euros in yearly savings for companies. The Circular Economy Innovation Programme is part of the Eco-Innovation Working Group, which comprises key stakeholders. The government has allocated a public budget of over 7 million euro to promote business projects under the Circular Eco-Innovation Programme. Based on the successful results of these projects, companies anticipate an additional annual turnover of 130 million euro, the establishment of 22 new business lines, the creation of nearly 200 new jobs, the avoidance of 228,000 tonnes of greenhouse gas emissions per year, and the prevention of over 300,000 tonnes of waste discharge per year in the coming years. For every public euro invested, there has been a corresponding generation of 21 euros in additional annual turnover within the private market.

22. Türkiye Material Marketplace (TMM)[28], launched in 2016 with the support of the European Bank for Reconstruction and Development, is an online platform that allows companies from different industries to exchange and reuse materials in different industries. Thus, one organization's waste and/or by-product becomes another organization's raw material through material exchanges among member companies. In

[26] https://unece.org/media/news/378962.

[27] Ihobe, Basque Environmental Agency, Eco-innovation towards a circular economy in the Basque Country, European Commission. Available at https://circulareconomy.europa.eu/platform/en/knowledge/eco-innovation-basque-country-105-industrial-projects-new-circular-solutions

[28] Türkiye Material Marketplace, Homepage. Available at https://ebrd-tmm.com/about-us

addition to diverting waste from landfills, recovery activities promote the efficient use of materials and generate significant cost savings and energy savings while creating new business opportunities. So far more than 77,000 tons of materials were recovered, the amount of additional value created amounted to 3.8 million USD.[29] During the first five years of work, TMM analyzed the potential of the circular economy in the main sectors of Türkiye and gave preference to textiles, plastics, metal, food and construction. TMM has started in-depth industry work on each of these sectors to guide companies in the transition from a linear to a circular economy. This cross-industry material reuse creates environmental and economic advantages through circular economy.

23. The World Economic Forum hosts an Open innovation platform, UpLink[30], which is positioned to support innovative solutions from all over the world and leverage the Forum's networks and opportunities. As such, UpLink forms the bridge between innovators and the networks they need to access to scale their ventures. Its focus is to connect selected Top Innovators with unique opportunities within the Forum and partners networks. Uplink allows its innovators to gain visibility through leveraging the platform and the opportunities it provides. Top innovators work closely with the UpLink Team for the first year of their engagement who are eager to support innovators in getting familiarized with the Forum and help them scale their ventures to make a positive impact for people and the planet. Upon winning a challenge, Top Innovators are invited to join the UpLink Innovation Network, a community of Top Innovators, partners, experts, mentors and investors within the World Economic Forum. Through this network, the Forum runs a yearly programme which provides insights and knowledge on topics relevant to Innovators organizations. The programme offers 2-3 opportunities a month, whereby Top Innovators can pick and choose opportunities based on their interests and availability.

C. Finance and Investment Services Adapted to Growth Stages

24. Actions:

(a) Establish dedicated funding mechanisms and financial instruments to support IHGEs and high-tech circular economy start-ups at different stages of growth, such as seed funding, venture capital, and impact investment funds. Grants to business start-ups and SMEs innovating in circularity are among the most commonly funding schemes to support green and circular businesses[31].

(b) Foster corporate spin-offs from large national or multinational firms.

(c) Encourage collaboration between public and private financial institutions to provide capital and financial support for IHGEs, as well as innovation-enhancing public procurement.

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[29] Presentation of Ms. Konca Çalkıvik, Executive Director of the BCSD Türkiye, during the ETIN Seminar on Platforms, Circular Economy and Transformative Innovation: A Cross-Industry Comparison, 3 March 2023. Available at https://unece.org/info/events/event/376608

[30] UpLink, Innovation Challenges, Homepage. Available at https://uplink.weforum.org/uplink/s/innovation-challenges

[31] UNECE Circular Economy Transition Paper Series, Mobilizing Financing for the Circular Economy, 2023. Available at https://unece.org/sites/default/files/2023-04/CIRCULAR-STEP%20Mobilizing%20Financing-%204.28.2023_0.pdf

(d) Develop innovative financing models, such as pay-for-performance schemes or revenue-sharing agreements, to align investor incentives with circular economy outcomes.

(e) Collaborate with circular economy-focused organizations and investors to internationally promote the group of potential IHGEs highlighting their potential for implementing circular economy principles and showcasing successful examples of circular business models.

(f) Access the progress of supported enterprises towards implementing circular economy principles and achieving circular economy-related targets. This includes measuring reductions in resource use and waste generation, as well as assessing the economic benefits of circular business models. Governments can use the data collected to identify opportunities for further improvement and innovation in the circular economy ecosystem.

25. A monitoring methodology is required to assess the circularity of business models and track the progress of enterprises that have received state support. The methodology should include a set of indicators that capture the key elements of circularity relevant to the supported enterprises. These indicators can include metrics related to resource efficiency, waste reduction, recycling rates, product lifespan, and use of renewable materials. The set of indicators should complement the standard set of business indicators such as financial, sales, customers, and operational efficiency.

26. Availability of and access to reliable information is crucial for monitoring enterprises in the circular economy; this is where traceability takes precedence. The traceability of value chains is the ability to identify and trace the history, distribution, location and use of products, parts and materials. It can help value chain actors respond to the growing demand for data on the sustainability performance of products, processes and organizations, to establish the credibility of circularity claims. UNECE offers[32] a series of policy tools that can help foster or enhance traceability in value chains for circularity in the three hotspot sectors such as garments and footwear, minerals, and agrifood.

27. The UNECE region provides a wide scope of funding programmes designed specifically for companies specialised in the circular economy. For example, X2.0 - Driving Deep Tech Growth[33] is an EU-funded deeptech growth program that seeks to ensure the scaling up of EU deeptech start-ups by providing custom, industry-focused, five months growth programs that will act as a catalyst in delivering market-ready applications and technology solutions in five key impact areas. First impact area is manufacturing and circular economy. The focus of the program are start-ups, scale-ups and SMEs, operating in the deeptech domain – innovations with significant scientific advances or high-tech innovations coming from the digital agenda technologies, such as AI, advanced computing, cybersecurity, next-gen internet, blockchain, IoT, Greentech and Fintech technologies. From November 2022 to November 2024 the programme will distribute 1.5 million euro in innovation and scaling up services to 50 deep-tech start-ups. It will promote the growth and strengthening of relationships

[32] UNECE, Enhancing Traceability of Products along International Value Chains for the Circular Economy and Sustainable Use of Resources, ECE/TRADE/C/CEFACT/2022/8, 4 October 2022. Available at https://unece.org/trade/uncefact/TSVCCE-2022

[33] X2.0 - Driving Deep Tech Growth, Homepage. Available at https://x2-0.eu/

between moderately innovative and highly innovative regions by providing needs-based, custom, industry-focused, growth programs to deep-tech start-ups.

28. There is an urgent need to finance the circular transition to a circular economy through public-private partnerships (PPPs). Examples of public-private partnerships working to develop scale-up ecosystems can serve as pointers for reinforcing the support to IHGEs in the SPECA sub-region. UNECE is currently working[34] on separate guidelines and cover topics related to PPPs for the SDGs in the fields of sustainable procurement, sustainable finance, and digital and green transformations for sustainable development. As part of the Seventh UNECE International PPP Forum, UNECE organized[35] a competition to showcase the best PPP and infrastructure projects that contribute to the circular economy agenda and the SDGs. The winner of the award is the 1915 Çanakkale Bridge project, the longest suspended bridge in the world across the Dardanelles in Türkiye. The second placed project was an energy renovation project for public buildings in Ljubljana, Slovenia; and the third place went to a Waste-to-Energy project in Dharan, Nepal, that is contributing to reducing landfilling by 75 percent. UNECE has utilized its PPP and Infrastructure Evaluation and Rating System (PIERS[36]) Methodology for rating projects.

29. The Circular & Fair ICT Pact (CFIT)[37] is an international procurement-led partnership to accelerate circularity, fairness and sustainability in the ICT sector initiated by the Netherlands in June 2021. The Pact aims to set up networks of procurers in every participating country or region. These networks are connected internationally to share knowledge, work out harmonized criteria, guidelines and tools.

D. Reinforcing Firms' In-House Capabilities to Grow Skills and Talent

30. Actions:

(a) Invest in training programs and capacity-building initiatives to enhance the skills and knowledge of policymakers as well as IHGEs' workforce in circular economy principles, sustainable design, resource optimization, and waste management. SMEs might need additional support and investment in skills for the circular economy.

(b) Facilitate collaboration between IHGEs and research institutions to foster innovation and knowledge exchange.

(c) Promote partnerships between IHGEs and educational institutions to develop tailored curricula and internships that bridge the gap between academia and industry.

[34] UNECE, Guidelines on promoting Circular Economy in Public-Private Partnerships for the United Nations Sustainable Development Goals, Note by the secretariat ECE/CECI/WP/PPP/2022/4, 18 October 2022. Available at https://unece.org/eci/documents/2022/10/working-documents/guidelines-promoting-circular-economy-public-private

[35] UNECE, press-release "UNECE announces winners of its PPP and infrastructure award 2023", 11 May 2023. Available at https://unece.org/economic-cooperation-and-integration/press/unece-announces-winners-its-ppp-and-infrastructure-award

[36] UNECE PPP and Infrastructure Evaluation and Rating System (PIERS). Available at https://unece.org/ppp/em

[37] The European Commission, Circular and Fair ICT Pact, Homepage. Available at https://public-buyers-community.ec.europa.eu/communities/circular-and-fair-ict-pact

31. The UK National Interdisciplinary Circular Economy Research (NICER) Programme[38] is a four-year 30 million pounds investment from UKRI to move the UK towards a circular economy. The four-year programme launched in January 2021, initially comprising of 34 universities and over 150 industrial partners, with a key aim of growing the circular economy community through a significant programme of outreach and collaboration. The Programme aims to deliver research, innovation, and the evidence base to move the UK towards a resilient UK circular economy. The NICER programme is the largest and most comprehensive investment in the UK Circular Economy to date. The programme is delivered in partnership with industrial organisations from across sectors and the Department for Environment, Food and Rural Affairs (DEFRA), to ensure research outcomes contribute to the delivery of industrial implementation and government policy. The Programme is made up of five Circular Economy Research Centres, each focused on a speciality material flow, and the co-ordinating CE-Hub, led by the University of Exeter. The five Circular Economy Research Centres and co-ordinating Hub that make up the NICER Programme are as follows:

(a) The Textiles Circularity Centre (TCC), led by the Royal College of Art;

(b) the Interdisciplinary Circular Economy Centre for Mineral-based Construction Materials (ICEC-MCM), led by UCL;

(c) the National Interdisciplinary Centre for the Circular Chemical Economy (CircularChem), led by Loughborough University;

(d) the Interdisciplinary Circular Economy Centre for Technology Metals (Met4Tech), led by the University of Exeter;

(e) the Interdisciplinary Centre for Circular Metals (CircularMetal), led by Brunel University London.

The Innovate UK Circular Economy for SMEs[39] is a funding call held in December 2022. The funding call provided 1 million pounds to UK SMEs to engage with and benefit from access to expertise at the five NICER Programme research centres via collaborative research and development activities.

E. Going Global: Networking and Scaling in International Markets

32. Actions:

(a) Support IHGEs in accessing international markets by providing export assistance, market intelligence, and trade promotion services.

(b) Facilitate networking opportunities and business matchmaking events to connect IHGEs with potential international partners, customers, and investors.

(c) Establish international cooperation and knowledge-sharing platforms to facilitate cross-border collaboration among IHGEs and foster global circular economy ecosystems.

(d) Create an enabling environment for exports of green and circular economy products diversifying from export of natural resources and commodities. A growing number of

[38] NICER Programme, Homepage. Available at https://ce-hub.org/nicer-programme/

[39] The Innovate UK Circular Economy for SMEs, Homepage. Available at https://ce-hub.org/innovate-uk-innovating-with-the-nicer-programme/

regional trade agreements address trade-related issues and increasingly look at sustainability and circular economy matters[40].

(e) Attract ambitious circular economy entrepreneurs and scalable companies from abroad to establish locally and grow globally.

33. MaRS[41] from Canada is a private, non-profit incubator and innovation hub in Canada. It aims to provide comprehensive support to green start-ups, including facilities, technology surveillance, market exploitation, funding, networking or any other needs related to a particular green venture. Specific green entrepreneurship targets are also promoted, through nurturing projects with high potential to reduce greenhouse gas (GHG) emissions. For instance, "Mission from MaRS" is a new programme aimed at supporting 10 Canadian start-ups, which are expected to contribute to a reduction of over 41 megatons of GHG emissions by 2040.[42] MaRS works in close collaboration with the government, trade commissions and other entities in order to facilitate access to domestic and international markets for green start-ups, and to assist these companies in moving from pilot schemes to full-scale commercial activities.

34. Circul'R[43] from France accelerates the transition towards a circular economy by connecting circular economy start-ups worldwide with big companies that want to accelerate on the topic. Circul'R works with more than 120 French and international companies to accelerate the transition to a circular economy, by connecting them with start-ups to build pilot projects and scale them up. Circul'R has also created the Circular Club with the Ministry of Ecological Transition of France to host events where big companies meet with circular economy start-ups and build partnerships for scaling up the circular economy. For example, Circul'R consulted Eurostar to launch the first zero-plastic train in Europe [44] and identified start-ups and NGOs in London and France that could provide respective solutions. Another example relates to collaboration between Circul'R and the French Agency for Development (AFD) to create a circular economy assessment tool for a Turkish bank, TSKB. The tool was created to ensure that credit loans are given only to start-ups developing circular solutions. Thanks to this tool, TSKB was able to receive a 80 million euro loan from AFD to invest in start-ups in Türkiye. This success story shows that tools for financial and environmental assessment can help circular economy start-ups secure loans and financing. Circul'R has been collaborating with French incubators to promote the circular economy through a project with Citeo, an extended responsibility producer company for packaging in France. They organize the Circular Challenge, an annual event that identifies the best circular

[40] UNECE, policy brief "Accelerating the Circular Economy Transition: Policy Options for Harnessing the Power of Trade and Economic Cooperation", December 2022. Available at https://unece.org/sites/default/files/2022-12/Policy%20Brief%20-%20Circular%20Economy%20-%20Policy%20Options%20for%20Harnessing%20the%20Power%20of%20Trade%20and%20Economic%20Cooperation%20-%20%20ECE_CTCS_2022.pdf

[41] MaRS, Homepage. Available at https://www.marsdd.com/our-sectors/cleantech/

[42] OECD (2022), Policies to Support Green Entrepreneurship: Building a Hub for Green Entrepreneurship in Denmark, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/e92b1946-en

[43] Circul'R, Homepage. Available at https://www.circul-r.com/

[44] Contribution of Mr. Raphaël Masvigner, CoFounder of Circul'R during the UNECE policy dialogue "Fostering Circular Solutions through Innovation", 3 April 2023. Available at https://unece.org/economic-cooperation-and-integration/events/fostering-circular-solutions-through-innovation

economy start-ups worldwide with solutions for packaging and seeks to invest in and help them grow in France and other countries. This initiative aims to source the best solutions from Africa, South America, and Asia, in order to encourage local growth and circular economy practices.

35. In recent years a number of important initiatives have been launched and implemented by the European Commission to create an enabling environment for the SMEs green and circular transition in the EU. They could be an important point of reference for policy makers in SPECA participating States, including as it relates to export-oriented companies in the sector. For example, the Green Action Plan for SMEs[45], adopted in 2014, presents a series of SME-oriented actions at European level to help exploit the business opportunities of a green transition, by improving the resource efficiency of European SMEs, supporting green entrepreneurship, exploiting the opportunities of greener value chains, and facilitating market access for green SMEs. As of 2022, about 32 percent SMEs in the EU offer green products or services, with a further 11 percent planning to do so in the next two years.[46]

IV. Conclusions

36. SPECA participating States have already taken several necessary steps and created support mechanisms and infrastructure to assist IHGEs. It is important to carefully assess these measures and modify them based on their practical impact and lessons learned. International practices can be adopted in the SPECA sub-region to varying degrees within the national context, and certain components can be selectively implemented. Existing institutional processes and support mechanisms can be innovated or rebranded without the need to start from scratch, thus avoiding unnecessary resource expenditure. Thus, as a starting point, it is crucial to identify national support programs and initiatives where circular economy can be specifically incorporated. This includes holding consultations with relevant stakeholders to identify gaps in the current entrepreneurship ecosystem that prevents the development of the circular economy and developing targeted interventions to address these gaps.

37. In May 2023, UNECE conducted a survey titled “Innovative Entrepreneurship for the Circular Economy” among the UNECE expert and policymaker community. Fifty percent of the respondents expressed their interest in working in the circular economy in the future, while 29 percent reported already working in this field. The survey participants also expressed their willingness to participate in bilateral interviews with UNECE to share their experiences and practices.

[45] The European Commission, Green Action Plan for SMEs: turning environmental challenges into business opportunities, July 2014. Available at https://ec.europa.eu/commission/presscorner/detail/en/IP_14_766

[46] The European Commission, report “SMEs, green markets and resource efficiency”, March 2022. Available at https://op.europa.eu/en/publication-detail/-/publication/accce9ee-db11-11ec-a95f-01aa75ed71a1/language-en

Annex 1. Additional visual materials to the secretariat note.

Background

No generally accepted or agreed at the international level definitions of the CE.

CE aims at*:

i) maximizing the value of the materials, products and other resources (e.g. water, energy) that circulate in the economy by keeping them circulating for as long as possible;

ii) minimizing the consumption of material resources, with particular attention to primary materials, hazardous substances, and waste generation.

7,2% The level of circularity of the world economy («Circularity Gap Reporting Initiative», 2023)

*For more information https://unece.org/statistics/ces/circular-economy

Azerbaijan	'Non-resource' green growth has been announced as a priority of the Azerbaijan Development Framework for the period up to 2030.
Kazakhstan	Some of the CE principles are reflected in the National Development Plan until 2025. Almaty is the first city in Central Asia to have identified the possibilities of the CE. As a result of the analysis, new inter-sectoral strategies for the CE have been developed to achieve the sustainable development goals in the city.
Kyrgyzstan	CE aspects are included in the Green Economic Development Program 2019-2023.
Tajikistan	CE aspects are included in the National Green Economy Strategy 2023-2037. UNECE, together with the Ministry of Economic Development and Trade, is developing a roadmap for the CE transition, including traceability elements of value chains.
Turkmenistan	The government is working to diversify its economy, and to move away from raw materials orientation to stimulate the development of industries that are not related to the extraction of hydrocarbons.
Uzbekistan	The CE agenda is included in the programme for the transition to a green economy and ensuring "green" growth until 2030. In cooperation with the European Union, SWITCH Asia, the World Bank and UNDP, the Ministry of Economy and Finance has developed a draft of the CE action plan for the agricultural sector.

Political Priority

Source: Chatham House, https://circulareconomy.earth/?

4,5 billion US dollars will be **the size of the global market** for the CE solutions by 2030, which will open up significant opportunities for start-ups and SMEs (World Economic Forum, 2018)

43% more chances of scaling for **young innovative enterprises** that combine economic and social goals compared to purely commercial companies (World Economic Forum, 2021)

6 million **jobs** can be created by moving to the CE, in areas such as recycling, repair, rent and re-manufacturing (World Labor Organization, 2018)

600 billion euro will be **the cost savings** resulting from a 3% increase in resource productivity in Europe by 2030 driven by the CE (McKinsey&Company, 2015)

Business Models Using CE Principles

Model of circular supply of materials
- circular product design,
- use of alternative environmentally friendly materials,
- Improvement of process efficiency to prevent waste generation

Service model
- sharing,
- leasing,
- "product as a service"

Resource recovery model
- re-profiling,
- recycling of waste materials

Digital platform model
- co-ownership,
- sharing,
- retail,
- logistics,
- industry symbiosis

Product life extension model
- recovery,
- repair,
- reuse

Circular design | **Circular business models** | **Reverse logistics**

Industry examples

PRECIOUS METAL PROCESSING

UMICORE PMR

REDUCING FOOD WASTE AND REVERSE LOGISTICS

CIRKLE

CIRCULAR DESIGN IN THE TEXTILE INDUSTRY

Resortecs

Source examples for finding business cases:

Ellen MacArthur Foundation

Circulator

European Circular Economy Stakeholder Platform

General approach to public administration for the CE transition

Source: based on the UNECE study "Institutional arrangement for the Circular Economy",2023

Innovation policy for the CE

Examples of Involved Organizations and Goals

- Funding for research and innovation programs
- Business incubators, accelerators and technology parks
- Public Procurement

- **Ministry of Science and Technology**
- **Ministry of Digital Transformation**
- **Ministry of High-Tech Industry**
- **Chamber of Commerce and Industry**
- **Academy of Sciences**
- **Business and Industry**
- **Technology companies**

- Science-business linkages
- Digitalization, artificial intelligence
- Educational programs and advanced training

Source: based on the UNECE study "Institutional arrangement for the Circular Economy",2023

NICER Programme: Circular Economy National Research Programme in the UK

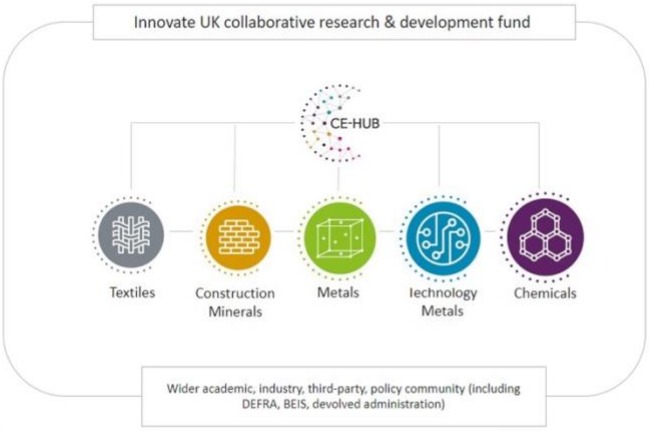
An example of a research and innovation programme that ensures links between industry and science

Budget: £30m over 4 years

Responsible agency: UK Research and Innovation, the national funding agency that invests in science and research in the country

Members:
- more than 150 industrial organizations,
- 34 universities,
- Ministry of Environment, Food and Agriculture

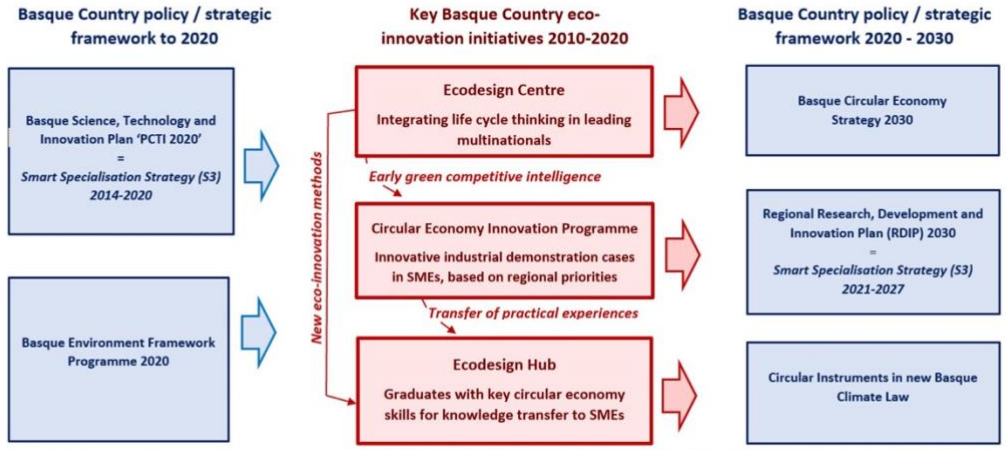
Expertise: 5 research centers and one coordinating CE-Hub



Source: https://ce-hub.org/nicer-programme/

Basconia: A systematic approach to implementing eco-innovations

Example of Effective Institutional Management for Innovative Transformation of Industries Towards CE



Source: https://s3platform.jrc.ec.europa.eu/en/w/eco-innovation-towards-a-circular-economy-in-the-basque-country

Switzerland's national business incubator for start-ups with circular business models

An example of a national business incubator supported by the state

Budget per team: CHF 15,000.

Objective: To support start-ups in creating prototypes and developing solutions to accelerate the CE transition in Switzerland

Responsible agency: Federal Office for Spatial Development

Support elements:
- Community and space at the Impact Hub office
- Trainings and mentoring programs,
- Promotion

Source: https://www.cetransition.ch/en/circular-economy-incubator

Examples of "circular" business incubators and accelerators

UK: "Circular Disruptors Accelerators" - Acceleration program at the Cambridge Institute for Sustainability Leadership

Canada: "MaRS" - private non-profit incubator and innovation center

Netherlands: "The Circular Economy Accelerator portal (Versnellingshuis)" - online platform to support entrepreneurs in the implementation of plans and ideas in the CE field

USA: "Google for Startups Accelerator: Circular Economy" - Google Acceleration Program for the CE start-ups

Switzerland: "Circular Economy Transition Incubator" - incubator for the CE start-ups

ACCELERATE2030

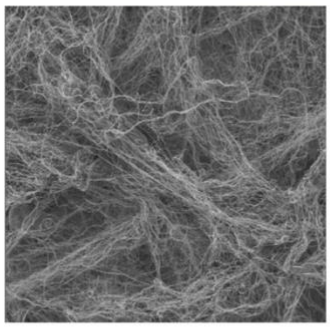
Accelerate2030 - this program, initiated by Impact Hub Geneva and UNDP, identifies entrepreneurs from emerging economies with SDG-enabled solutions and provides them with customized scaling programs both nationally and globally.

Circul'R

Circul'R - an international network in France to connect innovative start-ups with companies so that they can jointly create solutions to accelerate the CE transition.

UNECE Accelerating the Circular Economy

Examples of CE start-ups



Gelatex Technologies

This Estonian start-up has patented a new high-performance spinning method and device for the production of nanofibers.

Gelatex

https://www.gelatex.com

Miret

This start-up in Croatia produces compostable and recyclable sneakers using natural, renewable, and sustainable materials.

MIRET

https://www.miret.co

Biolive

This biotechnology company in Turkey produces antimicrobial and antioxidant bioplastic granules made from olive seeds.

biolive

https://www.biolivearge.com