The role of multi-stakeholder platforms in the path towards Circular Economy (CE) transition in Europe

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**Abstract.** Circular Economy (CE) allows synergies between stakeholders along different production chains and stages in order to reduce waste, maximize the value of products and increase loop closure. The transition to CE requires the participation and the engagement of various players, in line with the quadruple helix approach, including enterprises, trade associations, institutions, central and local public administration, education, research and innovation institutions, as well as citizens but governance is needed. Multi-stakeholder platforms (MSPs) facilitate dialogue and interaction between actors and create an innovation ecosystem where knowledge, ideas, good practices, perspectives, criticalities, and expectations on circular economy are shared. Starting from a sample of CE platforms it was computed a selection of platforms with similar characteristics to the Italian Circular Economy Stakeholder Platform (ICESP); the case studies were analysed to understand the role they play within the country in which they operate, their objectives, governance, stakeholders involved, actions and results they produce. Most platforms have similar objectives but their role differs depending on whether they configure as point of convergence between stakeholders or as service providers for different actors. This difference is reflected also in the organisation, activities and stakeholders they involve, as well as for the results they achieve.

**Keywords.** *Circular Economy; multi-stakeholder and digital platforms; innovation Ecosystems; stakeholder engagement; network governance.*

1. *Introduction*

The circular economy transition needs a shift from competition to cooperation between organisations and a turning away from individual gain for the sake of a common benefit. It requires the participation of various players, each of whom has a specific role to play, in line with the quadruple helix approach (Carayannis and Campbell, 2009), including enterprises, trade associations, institutions, central and local public administration, education, research and innovation institutions, as well as citizens. All stakeholders shall act together to identify and overcome the operational challenges of the shift towards circular economy through innovative solutions.

Given the importance of stakeholder cooperation, MSPs can act as enablers for a fastest circular economy transition. The goal of this study is to analyse and compare platforms of stakeholder cooperation with similar characteristics to ICESP operating in different European countries.

Therefore, this article highlights the contribution of MSPs in shaping national and international policies, as they represent good practices on co-governance and networking governance processes in the transition towards circular economy, fostering the stakeholder involvement and interaction.

The first section of this paper is dedicated to literature review, where the purpose and the role of MSPs is explained. Then, it will be described the methodology used for the selection of the platforms similar to ICESP and the analysis of the DB used for the study. Last, the case studies will be explored, investigating their contribution in shaping national and international policies, the relationships they facilitate between different stakeholders, the projects they support and the documents with which they contribute to the dissemination of these issues.

1. *Literature review*

MSPs are defined by Steins and Edwards (1999) as “decision-making bodies (voluntary or statutory) comprising different stakeholders who perceive the same resource management problem, realise their interdependence for solving it, and come together to agree on action strategies for solving the problem”. Even if MSPs can be very different, the generic objective of a MSP is to encourage the empowerment and active involvement of stakeholders in the search for solutions to shared problems (Faysse, 2006). The identification of stakeholders is the base for MSPs (Grimble and Wellard, 1997); they can be defined as those who have a stake in a certain decision, either as individuals or representatives of a group. Stakeholders can be actors who influence a decision, who can influence it or who are affected by it (Hemmati, 2002).

Referring to the definition by Steins and Edwards (1999), CE platforms gather stakeholders who perceive the same resource management problem. Circular Economy transition need the systemic collaboration between these stakeholders, who need to work together to create an innovation ecosystem, network of actors who support sustainable innovation by cooperating and sharing expertise and that activate virtuous and intensive knowledge flows (Asheim and Gertler, 2005; Etzkowitz and Ranga, 2015; Romano et al. (2014); Carayannis and Campbell (2009). Web technologies and digital platforms facilitate the opportunities of value creation in innovation ecosystems because they make the process of knowledge creation, assimilation and diffusion (Romano et al., 2014; Muntaner-Perich and de la Rosa Esteva, 2007) more effective and rapid (Del Vecchio et al., 2020).

CE platforms pursue different goals for which the collaboration between stakeholders is fundamental; first of all, stakeholder engagement is key in the decision making of policy makers in order to include their needs in policies. Secondly, CE platforms are hubs to share best practices, innovative solutions and knowledge so that innovation can spread between stakeholders. Last, enterprises, trade associations, institutions, central and local public administration, education, research and innovation institutions, as well as citizens need to cooperate to identify and overcome the operational challenges of circular economy through innovative solutions.

ECESP, the European Circular Economy Stakeholder Platform, is a great example of how a vibrant community can develop circular solutions together, transferring knowledge, sharing experiences and creativity and connecting organizations big and small. It is an initiative of the European Commission and the European Economic and Social Committee created to promote the transition to a circular economy “bringing together stakeholders active in the broad field of the Circular Economy as an action included in the 2015 EU Action Plan for the Circular Economy actions as well as to address the recommendation of the last communication COM (2019) 190 final (Brussels, 4.3.2019)” (Del Vecchio et al., 2020). The transition towards a circular economy cannot take place fast enough without the collaboration between public authorities, businesses, trade unions, consumers and society.

1. *Method*

ECESP DB. The study began with the construction of a dataset including the 167 circular economy networks/platforms collected on the ECESP website. The ECESP DB has the advantage to be built according to a framework which helps creating an organic categorization. The enrichment of the ECESP DB is computed by different actors - representatives or members of the platform, or other stakeholder organisations (e.g., ICESP) – who can submit a platform remotely. Then, ECESP publishes the platforms submitted according to criteria which are not made explicit on the website. When presenting the platform, each submitter needs to specify the different features of the platform presented. First of all, the *platform type* (e.g., national or regional, research and innovation, etc.), which gives information on the objective and on the focus of the platform, then the *country* where the network operates and *the language of the contents*, the *key area* of interest of the platform (e.g. secondary raw materials, production), the *sector*, to identify which are the specific sectors the platform address (e.g. recycling, awareness raising, etc.) and the *scope* (e.g. EU, international), which is a key information to understand the field of application of the studies and initiatives of the platforms. Starting from this framework, the dataset used for this study was created. For the data analysis, it is important to consider that each platform/network can be defined with more than one possible attribute for each data category (platform type, country, language, key area, sector and scope), so the total registered for each data category is more than the number of platforms of the sample (167) and the answers are not exclusive. Accordingly, the percentages resulting from the analysis do not sum up to 100%.

Selection of the case studies. Since the goal is to compare ICESP with other similar experiences and to understand the way they operate, filters with the specific features recorded for ICESP were applied to the dataset. In particular, ICESP is categorized on the ECESP DB as a platform type “national or regional”, the key area addressed are all the five possible key areas (production, consumption, secondary raw materials, waste management and innovation and investments), the scope is “national” while the sectors are not specified so no filter was applied to this category. The filter application reduces the DB to 4 platforms (ICESP included): Polish Circular Hotspot, Romanian Circular Economy Stakeholder Platform and State of Green (Denmark).

Additional DB. In order to make the sample more robust, we decided to extend the analysis to other platforms not included in the ECESP DB. The search for other platforms was conducted considering the platforms shared during the Circular Economy Stakeholder Conference (1-2 March 2022) and on the web. The DB built with these two sources have a total of 22 platforms, of which 8 were the ones shared during the Conference (5 not present on the ECESP DB) and 14 were found on the internet (8 not present on the ECESP DB). From the 13 platforms not included in the ECESP DB, we decided then to pick “Circular Economy Portugal” and “SRIP – Circular Economy” (Poland) because they were, in our opinion, coherent with the selection criteria used for the other platforms: national scope, multiple sectors and key area addressed. The sample is now satisfactory because it covers different European geographic areas.

Case study analysis. The analysis of the case study platforms was conducted starting from their website and on the internet, with the objective to identify the goals of the platform, the stakeholders involved, the governance, the activities, and the results obtained. A special attention was given to the way these platforms work to support local and national governments.

1. *Results*
	1. *ECESP dataset analysis*

*Platform type.* The most frequent platform type is “knowledge community” (about 41%), followed by “National or Regional” (36,5%), “Interdisciplinary exchange” (30,5%) and “research and innovation” (27,5%). Then, it follows “education or training platforms” (23.4%), “sectoral” (20.4%), “interest group” (16.2%), “other” (12.6%) and CSO (10.2%). Table 1 (Annex I) summarize these data.

*Country.* Looking at the countries where those platforms/network are in action, the majority classify as “EU” (41 platforms; 24.6%), meaning that they address European Union in general. If considering the single country, Germany is the one where CE platforms are most frequent (23 platforms; 13.8%); the Netherlands follow with 17 platforms and then Spain and Belgium (15 platforms). As for “other” countries, there is one platform recorded in Serbia, Africa, Israel, Turkey, Georgia, Ukraine and Iceland, four in Norway and three that operate internationally. As for Italy, there are 9 CE platforms working to facilitate the transition in its territory.

*Language of original content.* As expected, the majority of the platforms (65.9%) produce their contents in English; the second language for frequency is German, with 27 platforms (16,2%) which are more than the platforms operating in Germany. Then, it follows French (12%), Spanish (8.4%), Dutch (8.4%) and Italian (6%).

*Key Area.* Focusing on the key area, it is possible to see that the frequency distribution is similar across the categories, with “Innovation and investments” being slightly higher than the other areas (67,1%). The it follows “waste management” (56,3%), “production” (55,7%), “consumption” (48,5%) and “secondary raw materials” (48,5%).

*Sector.* In Table 2 (Annex I) it is shown the sectors categories more frequent in which platforms classifies on the dataset, with the frequency and the percentage. The other sectors are not shown on the table because they have a frequency <12%. The most frequent sector addressed by the platforms is “awareness rising” (21%) and “circular action for climate neutrality” (20.4%), which likely express the priorities felt by the Circular Economy platforms. Then, it follows the “recycling” sector (18.6%), B2B services (16.8%) and “Circular design”, “Construction, Buildings and Infrastructure”, “Digital solutions”, “Waste management & Secondary Raw Materials” (12.6%).

*Scope.* Last, the platforms are defined by their scope; more than half (54.5%) of the 167 platforms/networks of the DB have the goal to act on a “national” scale. About 33% of them act at European Level and the 18% at regional level. On Table 3 (Annex I) it is shown the scope with higher frequency (>10%).

*4.2 Case studies*

The analysis of the case studies is summarized in the Table 4. In Annex II the full analysis of the case studies is available.

1. *Conclusions*

The analysis of the platforms revealed that, even if the sample was selected to have similar characteristics, there are differences in the way they are organised, in the approach and activities they carry out to facilitate circular economy.

All platforms have the goal to facilitate the development of circular economy but they take different approaches: the Portuguese platform configure as top-down platform/organisation that work to support business and institution when they request it. The Danish platform works to facilitate the transition of other countries by promoting their practices, organisations and solutions; their objective is to inspire other countries on their journey towards circular economy by sharing Danish knowledge and expertise. SRIP-Circular works to make Slovenia more competitive and provide also technical services as project consultancy and technology transfer. On the other hand, the Italian and Romanian platforms configure as a network of network, providing the service of being a convergence point for national stakeholders for inspiring each other and share their knowledge. The Polish platform aspire to facilitate the transition from the global community to cities by creating connections between stakeholders. The difference reflects also on the stakeholders involved; the Slovenian, Romanian, Italian and Polish platforms engage local and national administrations, research institutes and enterprises, while in the case of Portugal, the network is made of professionals who give their expertise and provide a service to support national development, enterprises and startups. Also in the case of Denmark, members of the platforms are exports who provide and inspire with innovative solutions. Members have to pay a fee in the case of Portugal and Slovenia.

As for the organisation, the Italian and Romanian platforms were both founded by national research centres and they both organise their activities through working groups, each of whom operates on a specific topic. Also the activities of the other platforms are carried out according to focus area of interest but the separation between working groups is not made explicit.

Except for Portugal and Slovenia, all platforms gather best practices of circular economy; they all produce documents and report on CE topics and on their activities (Slovenia excluded); all of them, except for Portugal, promote events and initiatives for the promotion of the activities and awareness raising. Poland and Portugal give their support for creating innovative business model. Portugal is the only organisation developing projects and, together with Slovenia to do project consultancy activities.

As for the platforms contributing the most to the development of national and local policies it seems that the Italian and Romanian realities, also given their close relationship with ECESP, are the ones carrying out more activities with this objective together with Poland. These three platforms are the ones that, according to the analysis of their website, have the mission to find innovative solution together for the sake of circular transition and do not pursue any economic benefit. This consideration is however limited because of the data available on the internet so further insights should be done on that before drawing definitive conclusions. Further activities could be aimed to create synergies, links and other collaborations between platforms and to foster the “network governance” approach that recently ECESP has investigated.

Table 4. Case studies analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Platform | **Goals** | **Stakeholder** | **Governance** | **Activities** | **Results** |
| *ICESP* | Promote knowledge sharing, dialogue and synergies between actors and initiatives | Quadruple helix stakeholders | The platform is composed by a president, a technical coordinator, an ECESP interface, a working group coordinators' committee and the member’s Assembly. It is promoted by ENEA (National Agency for New Technologies, Energy and Sustainable Economic Development)  | A web platform facilitates the exchange of information and best practices. The activities are carried out by 7 thematic working groups. The platform gathers Italian CE good practices. | Each working group sets its goals, its action plan and its expected results; moreover, they produce different documents and reports on the thematic activities they carry out. |
| *Polish Circular Hotspot* | Find innovative, practical and scalable solutions through the experiences and resources of stakeholders. | Local and nationwide governments, business big and small and universities and scientists. | Public-private platform. The project was initiated by INNOWO (Institute of Innovation and Responsible Development). | Some of the activities are: development of strategies and roadmap, business connection, database to share circular innovations, best practices and programmes, supporting entrepreneurs to develop innovative circular business models. | Report development; analysis of the Polish National Strategy for CE, Polish Circular Week raise awareness of people on their consumption habits. |
| *ROCESP* | Promote knowledge sharing, dialogue and synergies between the Romanian actors and initiatives | Quadruple helix stakeholders | The platform includes a president, a technical coordinator, an ECESP interface, a working group coordinators' committee and the member’s Assembly. Founded by the Institute for Research in Circular Economy and Environment (IRCEM) “Ernest Lupan”. | A web platform facilitates the exchange of information and best practices The activities are carried out by 11 Advisory Groups (AG), each focusing on a specific topic. The platform gathers Romanian CE good practices. | All AGs promote thematic workshop, produce an annual review of information with reference to the most important European and national policy documents on circularity. |
| *State of Green* | Give the example and inspire other countries in their journey towards sustainable development by sharing Danish experience. | More than 600 Danish businesses, agencies, academic institutions, experts and researchers | Non-for-profit, public-private partnership owned by the Danish state and three leading Danish business associations, founded in 2008. There is a board of directors composed by 8 members. | Users of the platform can connect with solution providers who are the stakeholder who can help to solve their green challenges and can find inspiration among about 1400 featured cases, R&D projects, policy initiatives, products or services. They organize events and participation to congresses to communicate the Danish vision on CE. | Production of white papers with deepening on methods, tools and state-of-the-art solutions over different green sectors in Denmark and around the world. Participation to relevant programmes and projects aimed at accelerating the global green transition. |
| *SRIP-Circular Economy* | Increase efficiency and competitiveness of the Slovenia economy in the transition towards circular economy. | Entrepreneurs, educational and research institutions, non-governmental organisations and other interested parties, state. To become member, it is needed to pay an annual membership fee. | Managed by the Chamber of Commerce and Industry of the Štajerska region. It is organised in a programme Council, a steering Committee, a technological Council and the Assembly of the members of SRIP-Circular Economy. |  Creation of value chains in breakthrough technological fields. The platform provides different services, among which technology transfer, project consultancy, development of activities in collaboration with state institution representatives and provision of contents related to circular economy thorough workshop, public consultations, conferences. It gather several projects of circular economy in Slovenia. | The SRIP Action Plan reveals that in 2022 the number of established value chains in breakthrough technological fields were 5, the same number registered for 2018; Thirty-six are the new high technology intensive products and services export oriented in 2022 (compared to 8 in 2018).  |
| *Circular Economy Portugal* | Being a pole for the advancement of circular economy, supporting and inspiring the business community, government bodies and civil society in Portugal. | Professionals who work together as a multidisciplinary collective. To become a member, the fee is €20, and to join as company or organisation the fee is variable. | There is a of directors, an Advisory Board and the Statutory Auditor. | CEP develops different projects and activities in four areas: Feeding & Composting, Awareness & Training, Reuse & Repair and Analysis and Policies. Some of the activities are: consultancy for municipalities, companies and third sector organizations who want to take circular approaches, evaluation of the circularity of organisations to help them identify opportunities for advancement.  | Analysis for the European Union “Industrial Waste Management and Recycling of Secondary Raw Materials” (2020). Creation of “Pioneiros Circulares”, a network made of startups, SMEs and social economy organisations whose activities focus on sustainable reuse, repair and upcycling. It promotes the sharing of good practices, experiences and opportunities between the members. |

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Annex I – Tables ECESP dataset

Table 1. Platform type (frequency and percentage)

|  |  |  |
| --- | --- | --- |
| Platform type | Frequency | Percentage |
| Knowledge community | 68 | 40.7 |
| National or Regional | 61 | 36.5 |
| Interdisciplinary exchange | 51 | 30.5 |
| Research and Innovation | 46 | 27.5 |
| Education or Training Platform | 39 | 23.4 |
| Sectoral | 34 | 20.4 |
| Interest Group | 27 | 16.2 |
| Other | 21 | 12.6 |
| CSO | 17 | 10.2 |

Sources: Data elaboration from ECESP website

Table 2. Sector (frequency and percentage)

|  |  |  |
| --- | --- | --- |
| Sector | Frequency | Percentage |
| Awareness raising | 35 | 21 |
| Circular action for climate neutrality | 34 | 20.4 |
| Recycling | 31 | 18.6 |
| B2B services | 28 | 16.8 |
| Circular design; Construction, Building and Infrastructure; Digital solutions; Waste management & Secondary Raw Materials | 21 | 12.6 |

Sources: Data elaboration from ECESP website

Table 3. Scope (frequency and percentage)

|  |  |  |
| --- | --- | --- |
| Scope | Frequency | Percentage |
| National | 91 | 54.5 |
| EU | 55 | 32.9 |
| Regional | 30 | 18 |
| International | 29 | 17.4 |
| Global | 19 | 11.4 |
| Cities | 18 | 10.8 |

Sources: Data elaboration from ECESP website

*Annex II – Case studies analysis*

*ICESP – Italian Circular Economy Stakeholder Platform*

Goals. It is set up as a network of network that aims to be the place where national initiatives, experiences, challenges, perspectives and expectation on circular economy converge. The platform wants to express at one voice “the Italian way for circular economy”. ICESP objective is to promote knowledge sharing, dialogue and synergies between actors and initiatives around Italy and to map Italian CE best practices.

Stakeholders ICESP engages stakeholders who want to contribute to the transition to a circular economy and who represent their sector, from business and trade associations, institutions and public local and national administration, research and education, civil society and third sector. All participants must approve and sign the ICESP Charter, with which they engage to actively participate to the activities and the working groups and to promote ICESP and its objectives.

Governance. ICESP is the ECESP mirroring Italian Platform promoted by ENEA (National Agency for New Technologies, Energy and Sustainable Economic Development) which was part of the ECESP Coordination Group 2017-2020 and now is represented in each ECESP leadership groups (LGs). The role of ENEA is to transfer the knowledge and information coming from the ECESP coordination groups to the ICESP stakeholders and to share Italian best practices gathered on ICESP around Europe. The platform is composed by a president, a technical coordinator, an ECESP interface, a working group coordinators' committee and the member’s Assembly. The Assembly gathers once a year to approve the activities realised the previous one, plan the activities for the next one, evaluate the proposed changes of the working groups, approve the annual report, ratifying the entrance of new members and decide on the disqualification of inactive members.

Activities. The exchange of information and best practices is facilitated by a web platform. ICESP operates with seven working groups, each of whom focus on a specific matter: research and eco-innovation, knowledge sharing and education; regulatory and economic instruments; tools for measuring circular economy; sustainable and circular value chains; circular cities and territories; best practices and integrated approaches and promotion and communication. Results. Each working group sets its goals, action plan and expected results; moreover, it produces different documents and reports on the thematic activities carried out. The latest published document (May 2022), e.g., is about policy and governance instrument. It also organises events to promote and share the activities and results obtained by the working groups.

*Polish Circular Hotspot*

Goals. The mission of the platform is to support the global community, business, cities and governments in the transformation towards circular economy. It does that by promoting cross-sectoral and supra-regional cooperation as well as cooperation between administration and business. The final goal is to find innovative, comprehensive, practical and scalable solutions that will help in the transition towards circular through the experiences, knowledge and resources of stakeholders.

Stakeholders. The stakeholders involved are local and nationwide governments, business big and small and universities and scientists. All stakeholders are listed on the Polish Circular Hotspot website, divided by companies, NGOs, local Governments and experts and by sector.

Governance. The Polish Circular Hotspot is a public-private platform. The project was initiated by INNOWO (Institute of Innovation and Responsible Development), which is a member of Circular Action Hub, a network of non-governmental organisation cooperating to “improve the situation of society and environment’s condition”.

Activities. The activities of the platform address different industries, including construction, packaging, electronics, food, plastics, transports, energy and textiles. Among the activities carried out by the hotspot, in cooperation with their partners, there is: the development of strategies and roadmap to identify specific issues, including legislative ones, and to plan possible solutions; connecting business to create a network with partners inside and outside Poland; creating a DB where circular innovations, best practices and programmes are shared; creating workshop on circular economy and circular procurement for public institutions; supporting entrepreneurs to develop innovative circular business models; support to cities that want to become more circular by helping them identifying problems and creating solutions; creating workshops and trainings for anyone interested in circular economy. They also promote the Polish Circular Week to encourage Polish people to be more aware of their resource use.

Results. Together with INNOWO, it produced the report “Circular Construction in practice”, dated May 2019 and “Plastics in a closed-loop economy”, dated May 2020. As for the Polish National Strategy, the platform dedicates a part of its website identifying to the area where actions need to be taken for the “transformation towards a circular economy”: sustainable industrial production, sustainable consumption, bioeconomy and new business models. The goal set for the coming year is to publish the Circularity Gap report, to promote the “Circle Festival” in four cities simultaneously (Amsterdam, Glasgow, Oslo, Warsaw). Moreover, they want to develop the Circle City program and make the first scan of the Polish city.

*ROCESP - Romanian Circular Economy Stakeholder Platform*

Goals. The ROCESP platform aims to promote the dissemination of knowledge, the dialogue and the possible synergies between the Romanian actors within the initiatives, to facilitate the cooperation between actors and promote the integration of initiatives at Romanian level. It “is a platform configured as a network of networks whose purpose is to create a point of national convergence on initiatives, experiences, critical issues, perspectives and expectations on the circular economy” (ROCESP website, 10 June 2022).

Stakeholders. The platform brings together all actors who wants to contribute to the development of circular economy in Romania. ROCESP member are local and central public administration institutions, academic, research and innovation institutions, companies, professional associations and civil society representatives. The network counts so far 130 organizations and 21 social enterprises. All members have to comply with the ROCESP Charter, where common objectives, structure, area of interest and operational tools are defined.

Governance. The ROCESP (Romanian Circular Economy Stakeholder Platform) platform was founded in 2020 by the Institute for Research in Circular Economy and Environment (IRCEM) “Ernest Lupan”, as part of the ASIST project to be a national interface of ECESP. IRCEM share with ROCESP stakeholders the information obtained with the participation to the ECESP Coordination group and share with ECESP the Romanian CE best practices. The organisation of the platform includes a president, a technical coordinator, an ECESP interface, a working group coordinators' committee and the member’s Assembly. The Assembly gathers once a year to approve the activities realised the previous year, to plan the activities of the next year, to evaluate the proposed changes of the working groups, to approve the annual report, ratifying the entrance of new members and decide on the disqualification of inactive members.

Activities. ROCESP operates through a web platform that facilitate the exchange of information and best practices. The activities are carried out by 11 Advisory Groups (AGs), each of whom focus on a specific theme, has specific objectives and expected results. All groups pursue common objectives applied to the specific area they focus on: they examine the support mechanisms capable of mobilizing the potential of these sectors, identify the key elements of the reform of the legislation on the focus topic they have, stimulating knowledge and the dissemination of good practices in the fields, develop a regulatory framework on the topic at national and European level, develop instruments for measuring circularity and create opportunities for collaboration between stakeholders. The AG are the following: Social and collaborative economy; Urban and territorial development; Energy and energy efficiency; Food, Agriculture, Bioeconomy; Textiles and technical textiles; Air, Water, and Soil; Electrical, electronics and home appliances; Materials, Goods and Packaging; Mobility and transport; Education and training for the circular economy and Socio-culture and tourism. On the platforms there are 37 good Romanian practices mapped.

Results. All groups promote thematic workshop, produce an annual review of information with reference to the most important European and national policy documents on the circularity of materials, goods and packaging, identifying the different themes of intervention, determinants, needs, barriers and potential solutions offered through case studies and best practices collected and analysed. Moreover, they produce different document on the topic they focus on.

*State of Green*

Goal. The goal of the platform is to give the example and inspire other countries in their journey towards sustainable development by sharing Danish experience.

Stakeholders. It is a knowledge hub that gathers more than 600 Danish businesses, agencies, academic institutions, experts and researchers who share their expertise and solutions on green transition on four areas: energy transition, water management, green cities and circular economy.

Governance. State of Green is a non-for-profit, public-private partnership owned by the Danish state and three leading Danish business associations, founded in 2008. The patron of the platform is His Royal Highness, Crown Prince Frederik of Denmark; then, there is a board of directors composed by 8 members.

Activities. On the platform it is possible to contact solution providers who are the stakeholders who can help to solve the user’s green challenge and to find inspiration among about 1400 featured cases, R&D projects, policy initiatives, products or services. Solution providers and solutions are available for each focus area and different countries. State of Green also organise, facilitate and promote events, plan and host international delegation visits to Denmark, present the Danish vision at international exposes and conferences and communicate about the Danish green solutions and know-how on social media and press.

Results. They produce several white papers with deepening on methods, tools and state-of-the-art solutions over different green sectors in Denmark and around the world; the latest publication “Energy renovation of buildings” was published on the 24th of May 2022. Moreover, they participate to relevant programmes and projects aimed at accelerating the global green transition.

*SRIP – Circular Economy*

Goals. SRIP – Circular economy has the ultimate objective to increase efficiency and competitiveness of the Slovenia economy in the transition towards circular economy and to make Slovenia a circular economy hub “that will set the reference standard for top professionals and foreign investors through its knowledge, R&D infrastructure, breakthrough technologies and services, as well as its regulatory support environment” (SRIP website). The specific goals of the platforms are establishing a long term public-private partnership, improving the material efficiency index/productivity from 1.07 (2001) to 1.5 (2020), establishing new value chains with closed material flows and promoting new business models. Members of SRIP – Circular economy will also contribute to the fulfilment of the goals of the Slovenian Smart Specialisation Strategy (S4), i.e. “to boost Slovenia’s competitiveness in global markets by increasing the added value per employee, the share of knowledge-intensive and high-tech exports in total exports, and overall entrepreneurial activity” (SRIP website).

Stakeholders. The platform connects Slovenian entrepreneurs, educational and research institutions, non-governmental organisations and other interested parties, together with the state. It counts so far 84 members. In order to become member, it is needed to pay an annual membership fee which is different depending by the size of the enterprise and the organisation (local community, NGOs, R&D institutions).

Governance. It is managed by the Chamber of Commerce and Industry of the Štajerska region of Slovenia, which is a voluntary connection within the business community with the goal to enable economic growth and development in the country. The co-founders are the National Institute of Chemistry and the University of Maribor, Faculty of Chemistry and Chemical Engineering. Investment is co-financed by the Republic of Slovenia – first and foremost the MGRT (Ministry of Economic Development and Technology) and the SVRK (Government Office for Development and European Cohesion Policy)- together with the European Union under the European Regional Development Fund. It is organised in a programme Council, a steering Committee, a technological Council and the Assembly of the members of SRIP-Circular Economy.

Activities. The activities carried out by the platform are in line with the S4 focus area for the transition to circular economy. The areas addressed are: sustainable energy, biomass and alternative raw materials, secondary raw materials, functional materials, processes and technologies, circular business models. In these fields of focus, they create verticals/value chains that focus on the development of technological fields and products. These are supported by the horizontal network of IT, internationalization, and the development of human resources and common services.

The platform provides different services, among which technology transfer, project consultancy, development of activities in collaboration with state institution representatives and provision of contents related to circular economy thorough workshop, public consultations, conferences.

Results. The SRIP Action Plan reveals that in 2022 the number of established value chains in breakthrough technological fields were 5, the same number registered for 2018; Thirty-six are the new high technology intensive products and services export oriented in 2022 (compared to 8 in 2018). The number of participating companies increased from 42 in 2017 to 62 in 2022 while the number of new product categories/companies raised from 0 (2017) to 10 (2022). The annual range of investments into R&D slightly increased in the years: € 3 billion (2017), € 3.1 billion (2018) and € 3.4 billion (2022). The platforms gather several projects of circular economy in Slovenia.

*Circular Economy Portugal*

Goals. Circular Economy Portugal (CEP) is an organisation that promotes the transition towards circular economy in Portugal. The aim of CEP is to be a “dynamic pole for the promotion of the circular economy, supporting and inspiring the business community, government bodies and civil society in Portugal” (CEP website).

Stakeholders. A network of experienced professionals who work together as a multidisciplinary collective. To become a member, the fee is €20, and to join as company or organisation the fee is variable.

Governance. CEP is organised with a board of directors, an Advisory Board and the Statutory Auditor.

Activities. CEP develops different projects and activities in four areas: Feeding & Composting, Awareness & Training, Reuse & Repair and Analysis and Policies. All developed projects are available on the website, with information on the date, the partner, the support, promoter or client. CEP carries out activities of consultancy for municipalities, companies and third sector organizations who want to take circular approaches. They make courses for public and private organization on circular economy, provide services to cities to increase their circularity and sustainability. They evaluate the circularity of organisations to help them identify opportunities for advancement. CEP also supports those who want to make their business more circular, creating an action plan with precise objectives and support public and private entities conducting research and analysis on different topic and spotting international and national good practices.

Results. Among the project in the area “Analysis and Policies”, they conducted an analysis for the European Union “Industrial Waste Management and Recycling of Secondary Raw Materials” (2020) or the latest “Making the business case for packaging reuse systems” (2021), a study with the aim to evaluate the expansion potential of packaging reuse systems and inspiring companies and policy makers. CEP created “Pioneiros Circulares”, a network made of startups, SMEs and social economy organisations whose activities focus on sustainable reuse, repair and upcycling. The role of CEP in the network is to represent its members in public policy discussions and support them with knowledge, visibility and advice. The network promotes the sharing of good practices, experiences and opportunities between the member and has the goal to accelerate the transition to a circular economy. CEP realised different interesting publications, as the “Opinion on Action Plan for the Circular Economy” (2017) and the “Response to the public consultation on the New Circular Economy Action Plan Roadmap” (2020). On the Website Activity Report for the year 2018, 2019 and 2020 are available.