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Regional Innovation Monitor Plus

Thematic paper
Regions in transition towards a circular economy

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Regional Innovation Monitor Plus

Regions in transition towards a circular economy

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In cooperation with

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Preface

The research for this report was undertaken by Technopolis Group Belgium in the framework of the Directorate-General for Enterprise and Industry project ‘Regional Innovation Monitor Plus’ (Contract No. SI2.640327).

The RIM Plus aims to help regions to improve their innovation policies based on better and harmonised policy intelligence. It aims to contribute to the development of more effective regional innovation policies and promote policy learning.

Building upon the experience gained and results obtained during the implementation of the RIM in the period 2010-2012, the RIM Plus has evolved towards providing practical guidance to regions on how to use the collected information, establishing a network of regional experts with thematic specialisation and organising specialised workshops, taking into account the relevance and potential interest among the regional innovation policy makers.

The RIM Plus covers some 200 regions across EU-20 Member States: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden and the United Kingdom.

For further information about the RIM Plus and access to the full range of information on regional innovation policies, please visit the following website:

http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor

The main aim of the RIM Plus thematic reports is to conduct cross-cutting analysis and identify good practices in specific innovation policy-related topics, which are determined in consultation with the Commission services. The thematic reports draw upon the broad base of information and expertise within the RIM network and seek for synergies with other activities to promote policy learning.

This report served as an input to feed the debate and provide background to the RIM Plus workshop “Advanced Manufacturing, Circular Economy and Practices across EU Regions” which took place in Brussels on 17 December 2014. It builds upon the analysis of RIM plus repository and regional innovation reports prepared in the framework of this assignment, in addition to other external reports and materials. It also takes into account the information provided by the regional network of RIM Plus correspondents and further contributions sent by the regional stakeholders in advance of the workshop.

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Introduction

Circular economy as a EU strategy for resource efficient economy

A recent Commission Communication ‘Towards a circular economy’ considered circular economy essential for the transition towards a resource efficient, low-carbon economy in Europe. A circular economy is a model of a production and consumption that relies on the continuous reuse, recycling and recovery of natural resources. It is above all “an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models” (Ellen McArthur Foundation 2012).

The model is driven by both economic and environmental considerations. The overall case is based on designing industrial systems that keep natural resources in the economy - or simply: in use - for as long as possible while retaining both their economic value and technical properties. The latter is especially relevant for the business case of circular economy. Circular economy businesses rely on creating value by designing more durable goods, ensuring ever more efficient use of goods as well as by minimizing generation of waste and emissions across the whole lifecycle. One of the key changes in business propositions under the model is the shift in focus towards delivering services rather just material goods delivering these services.

Business models based on circular economy need both technological and non-technological innovations that enable regenerative use of natural resources across the whole life cycle. These changes require combinations of new product designs, alternative materials and production processes as well as new organizational models and marketing strategies. This notion of ‘innovation’, ‘change’ and ‘transition’ in business and social practices directly connects the circular economy agenda to eco-innovation. Eco-innovation can enable the transition by changing dominant business models, transforming the way citizens interact with products and services, and developing improved systems for delivering value. It will also require system innovations that change entire the value chains underpinning current production and consumption patterns.

Towards circular economy in European regions

Circular economy is an industrial system that will have different implications for different European regions. Eco-innovations fueling the transition emerge and diffuse differently in different locations. The regional perspective has been one of the least explored perspectives of the shift towards the new model. Taking into account different geographies is particularly relevant for understanding the dynamics of the transition, notably for changes of supply and value chains. The wider diffusion of new solutions or business models will depend on the absorption capacity and innovation potential of European regions and cities.

Circular economy will follow different paths in regions with different industrial and business profiles of their economies. As the paths towards circular economy differ between regions so do policy measures that can be deployed in support of the transition. There are diverse activities regions can engage in to support circular economy. Virtually any local and regional policy measure, ranging from direct support to companies to public procurement and local taxation, may be used to support the transition. Regional advisory business service centres can support energy and material efficiency in SMEs by providing specialized advice and information. Regional

innovation programmes can provide grants with a preference for eco-innovation and green business models. Public procurement can become ‘performance procurement’ based on criteria favouring contractors delivering resource and energy efficient and low carbon goods and services. Local taxation can be used to encourage energy efficiency of buildings, re-use and recycling as well as to discourage -or ban altogether- landfilling of valuable materials. Regional and local authorities have numerous tools at their disposal to support the shift towards circular economy.

About this report

This report offers a selection of examples of current activities related to circular economy across the EU regions. The examples are based on the RIM Plus database, and complemented by the information provided by the RIM Plus network of regional correspondents, in addition the available reports and other materials.

The purpose of this report is to explain the importance of circular economy at regional level and take a stock of the implementation of relevant instruments across European regions. It also seeks to identify patterns of regional actions which are relevant in relation to the agenda of circular economy and draw lessons based on regional practices from the actual implementation.

The report is divided into the following four chapters:

- **Chapter 1: Rationale for actions at regional level** gives an overview of existing instruments across EU regions in support of transition towards circular economy and discusses their intended objectives.

- **Chapter 2: Cooperation and involvement of stakeholders** presents how local and regional stakeholders are engaged in the design and implementation of instruments which are relevant in relation to circular economy and seeks to shed some light in terms of cooperation at different levels of governance.

- **Chapter 3: Main results and lessons learned** provides further information about the effectiveness of adopted policies and identifies the main lessons to be drawn for policy learning purposes.

- **Chapter 4: Conclusions** summarises the main emerging findings.
1. Rationale for actions at regional level

1.1 Building absorption capacity and ‘end-of-pipe’ support

Regions with the highest needs of improvements in terms of eco-innovation performance and circular economy transition seem to lack capacity to develop more integrated policy responses needed to overcome their lagging position. Also, the existing evidence confirms strong relationships between the autonomy and implementation and/or absence of eco-innovation policies. Regions with higher degree of autonomy in RTDI policies are regions that most frequently implement eco-innovation policies (Regional Innovation Monitor, 2011) and one would expect similar results in case of instruments supporting a change towards circular economy.

The analysis of the Regional Innovation Monitor Plus (RIM Plus) repository of measures identified several instruments that EU regions undertook with the view to build absorption capacity for circular economy and to trigger a shift towards sustainable production.

As a potential response to the regional governments’ perception of rising demands for public intervention to improve the environmental performance of companies, some of the regions launched measures providing incentives for companies to consider the benefits of reducing the environmental footprint for their business by absorption of new technologies, to utilise renewable energy or alternative sources of energy, become more energy efficient or take up environmental management practices and other organisational innovations rather than pursue own innovation activities or exploring new business models.

This type of measures is particularly common in the recent EU Member States, where the Structural Funds’ Operational Programmes are the major sources of funding for improving companies’ innovation capacity. A concrete example of traditional business investment support is briefly presented below.

Support to investment projects in SMEs (Kujawsko-Pomorskie, PL)

The sector of SMEs plays a particularly important role in the regional economy and labour market of Kujawsko-Pomorskie, as most of the companies are small or medium-sized enterprises. Overall the objective of this instrument is to increase competitiveness of SMEs. In terms of financial allocation, the measure accounts for around 12% of the total budget of the Regional Operational Programme 2007-2013.

The support offered to the beneficiaries should increase the operational capabilities of existing enterprises leading to the introduction of new or improved products, diversification of production by introduction of new products, significant improvement of production processes and provision of services.

An important feature of this instrument is that preference is given to companies implementing innovative technologies and promoting sustainable production patterns through the integration of efficient environment management systems as well as the use of technologies preventing from environmental polluting.
Support to investment projects in SMEs (Kujawsko-Pomorskie, PL) cont.

The supported projects mainly concern the purchase of tangible assets, process innovation or marketing rather than the development of new technologies. According to the latest available monitoring data (April 2014) there have been some 290 projects selected for funding. Concrete examples of projects include the implementation of innovative technologies in a company ASCO Co Ltd (a manufacturer of steel products and steel structures) or Form-Plast (specialised in manufacturing of moulded parts, especially for automotive and electronics sector).

Source(s):  
http://www.mojregion.eu

Some regions that have limited autonomy for own policy support are nevertheless starting to experiment with introducing eco-innovation support measures. For instance, Tehimpuls and the West Regional Development Agency in Romania will identify eco-innovative solutions and develop a portfolio of eco-innovative patents already existing in the region. Three of them with the highest potential will receive support for commercialisation. Moreover, based on the lessons learned in the implementation of the pilot scheme, the Agency intends to develop an incentive scheme to support eco-innovative start-ups.

Eco-innovative enterprises (West Region, RO)

Tehimpuls – the Regional Centre for Innovation and Technology Transfer of the West region in Romania launched a support pilot scheme for eco-innovative enterprises in the region in June 2014.

The scheme identified eco-innovative products and solutions in the West Region and developed a portfolio of innovative patents in the region. Based on a competition among regional enterprises, the scheme selected three start-ups that develop an eco-innovative product or technology. They will be supported with small grants, mentoring and advisory services for IPR and commercialisation of “green” patents.

Tehimpuls will also be developing a financing scheme for eco-innovative start-ups, based on “green” patents. In summary, expected results include:

• one patented eco-innovative solution and two eco-innovative businesses and the support to their long term sustainability;
• a database of eco-innovative patents in the region;
• a "green" patents portfolio; a training on commercialising "green" patents; and
• development of a financing scheme to support start-ups.

The lessons learned from this pilot could feed into the process of scaling up the measure for a broader range of enterprises in the future. It is advisable that regions start with a pilot or demonstration scheme, which can guide them in developing more ambitious measures in the future.

Source(s):  
http://www.tehimpuls.ro
https://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor/node/4650
1.2 Integrated approaches in promoting circular economy

Further recent regional policy support measures and initiatives took a wider-scoping approach by promoting resource efficiency, cleaner production and consumption, as well as catalysing innovation in the economy. The measures belonging to this category are not overly focused on providing support for “end-of-pipe” projects which are mainly focused on pollution control and treatment, but take a more systemic view to promoting resource efficiency throughout the company’s operations and taking into account lifecycle of products.

There are well-established models of providing advisory services to regional companies to improve resource and energy efficiency of their operations.

ENWORKS (Greater Manchester, UK)

ENWORKS was established in 2001 in the North West of England with an objective to improve economy and environment by engaging regional businesses in environmentally sustainable business practices.

ENWORKS provides practical, one-to-one support to businesses on how to improve resource productivity and reduce risks by converting environmental pressures into competitive advantage. ENWORKS services include, amongst others, on-site reviews of resource efficiency improvements and business risks, dedicated software allowing to monitor progress and savings (Online Resource Efficiency Toolkit) as well as courses and seminars aimed at improving skills and knowledge transfer.

Since 2001 ENWORKS consultants have advised some 12,500 companies from various sectors and of different sizes across the region. ENWORKS benefited from £6.1m investment from ERDF. In the 2007-2013 period the services leveraged over £12m of private investment and created and safeguarded 1,110 jobs. It is estimated that in the period 2007-2013 the companies saved £85m annually through resource efficiency improvements. In the same period, the initiative saved 376k tonnes of CO2 and diverted 436k tonnes of waste per year.

Source(s): www.enworks.com

Some measures support the use of eco-design in companies, which could lead to savings of material and energy resources in the production cycle, as presented by the following example.
Programme Eco-conception and eco-innovation (Auvergne, FR)

The Regional Chamber of Commerce and Industry of Auvergne introduced the Programme Eco-conception and eco-innovation in Auvergne in partnership with ADEME and the Regional Council in 2013.

The programme offers support in identifying parts of a company's production that could benefit from eco-design and assistance in finding relevant support. It also offers a repository of service providers in the region who can support companies to design eco-products and improve their resource efficiency.

All this creates an opportunity for companies to design new products on the basis of an integrated eco-design concept. The companies in the repository offer tools to evaluate the environmental impact of products and to design solutions that are creative and reduce the environmental footprint of products.

The SMEs beneficiaries of the programme can have access to financial support from ADEME and the Regional Council to the services of the companies in the eco-innovation repository. Services include assessments of the life-cycle of the SMEs' products and recommendations to improve them from the eco-design perspective.

Through the programme, the companies wishing to develop an eco-innovative product can have access to an eco-design expert of the Chamber of Commerce and Industry. The expert gives advice on the product or idea under development, provides a simplified environmental analysis and accompanies the SME to find eco-innovative solutions. The access to a specialised consultant is subsidised with up to 70% of the costs in the case of companies with less than 50 employees, 60% for SMEs with 50-250 employees and 50% for larger companies.

Source(s): [http://www.auvergne.cci.fr](http://www.auvergne.cci.fr)

Based on the information collected with the support of RIM Plus correspondents, we note that there is a number of French regions which have recently undertaken more in-depth analyses with the view of developing regional circular economy strategies.

For instance, Aquitaine was a pioneer to integrate the circular economy concept into its next Regional Plan for Economic Development by adopting a decision in September 2013. A first step was taken with the assignment commissioned to the Ellen Mac Arthur Foundation in order to identify regional assets.²

In another study by IAU Île-de-France published in December 2013, concrete regional projects on circular economy and industrial ecology in Île-de-France have been

identified. Also, a diagnosis of regional potential in circular economy in Haute-Normandie was published in September 2014 and in the same month the first annual meeting on circular economy was organised by the region with the objective to assess the challenges, identify the potential actors and design a strategy for the actual implementation of the circular economy in the region.

Further examples of such diagnoses in other regions show the willingness of regions to develop comprehensive and effective policy responses in support of development of circular economy. A concrete example is the assessment of circular economy in the agro-food industry in Navara which can be considered as a first step initiating the application of principles of circular economy in a given sector.

We also observe policy responses designed to reinforce the regional companies’ capacities as providers of services, technologies and equipments to foster the development of modern and advanced cleantech solutions. This involves for example actions aiming to stimulate the growth and internationalisation of small and medium-sized companies, providing environmental technologies and other solutions for a sustainable development. Other actions can include support for the development of cleantech clusters (e.g. Sustainable Business Hub - Swedish Model for Clean Growth) improving access to external sources of funding as well as investment readiness programmes targeted at cleantech businesses.

**Sustainable Business Hub - Swedish Model for Clean Growth (South Sweden)**

The Sustainable Business Hub (SBH) is a non-profit organisation, aiming to help companies whose products or services have a particularly high environmental profile. It was initiated as a project in 2001 by Region Skåne and the city of Malmö. In 2002 the non-profit organisation Sustainable Business Hub was established and in 2003 the operating company Sustainable Business Hub Scandinavia was formed. SBH creates networks between businesses and organisations in order to successfully market sustainable products and ideas.

The companies Sustainable Business Hub supports sell products, systems, solutions, services and know-how. They are mainly focused in the following fields: Energy & CO2-reduction; Waste management; Sustainable building & urban development; Water treatment; Air quality control; Energy efficient transportation; and Communication for sustainability.

The most important results of the ERDF co-funded project, known also as ‘Swedish Model for Clean Growth’ (2007-2010) managed by SBH during the 2007-2010 period are the following: an approach to organising sales missions has been developed, and

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4 See: [http://www.hautenormandie.fr/content/download/41927/581226/file/DIAGNOSTIC+REGIONAL+ECONOMIE+CIRCULAIRE-def.pdf](http://www.hautenormandie.fr/content/download/41927/581226/file/DIAGNOSTIC+REGIONAL+ECONOMIE+CIRCULAIRE-def.pdf)

Sustainable Business Hub - Swedish Model for Clean Growth (South Sweden) cont.

cooperation in a number of sub-clusters has been initiated within the Sustainable Business Hub in the areas of water and wastewater treatment, biogas, energy systems, and sustainable urban development.


http://www.sbhub.se

Due to the pressure on public funding, there are examples of actions taken at the regional level to integrate environmental requirements in the purchasing process of goods and services. Hence, this confirms that better leveraging investment through the public procurement has been recognised and placed high on the policy agenda especially in those regions with longer traditions and experiences in implementing innovation policy support measures.

Increasingly, the need to address local challenges by the use of innovative public procurement has been recognised as important (albeit still not to a satisfactory level across all the EU Member States and regions) to foster novel ideas and solutions offered by the companies and scientific research institutions.

The Green Public Procurement (GPP) scheme in Lombardy (IT)

The Lombardy Region has adopted Green Public Procurement (GPP) in order to integrate environmental requirements in the purchasing process of goods and services, extending this approach to regional public bodies and company system, with different targets: prevention of environmental impacts through reducing the use of natural resources, waste production, GHG emissions, and by promoting energy efficiency; rationalisation of public spending, reducing environmental externalities, and integrating references to the Life Cycle Assessment (LCA); definition of environmental criteria for purchasing goods and to stimulate demand for sustainable goods and services; and application in areas of high impact on well-being.
The Green Public Procurement (GPP) scheme in Lombardy (IT) cont

Implementation of GPP was supported through several action lines:

- Promotion of the approach through regional waste recovery legislation (recycled goods in tendering procedures for not less than 35% of the annual requirements of local authorities) and the prevention and reduction of anthropogenic emissions (supply of vehicles with low environmental impact and energy saving/energy efficiency for office machines, and computers in public bodies).

- Centralisation of public tendering procedures at the Regional Procurement Agency (RPA), which will manage framework contracts on goods and services for public entities. RPA will use the eprocurement platform SinTel in open, restricted, and negotiated procedures.

- Achievement of an agreement among the Chambers of Commerce, RPA, and Environmental Protection Agency in setting higher environmental standards for procured goods and services.

- Development of a technical framework for GPP in the areas of office equipment and computers, vehicles, and mobility of the staff of organisations, supply of electricity to public buildings and in the organisation of communication events. Additionally, the GPP criteria are being defined for textiles (clothing, uniforms and other textiles), food and catering service and building (building materials, building/maintenance of roads).

- Technical assistance activities for municipalities, regional parks, stakeholders, and trade associations to be provided in addition to the economic support for dissemination and training (International Forum “CompraVerde” and web site AcquistiVerdi.it).

Source(s): [http://www.agenda21.regione.lombardia.it/index/appalti_verdi](http://www.agenda21.regione.lombardia.it/index/appalti_verdi)  

Furthermore, the agenda of **boosting the advanced manufacturing industry** has led to the launch of a number of wide ranging new initiatives and new approaches across the EU regions. Particularly, developing factories which are able to carry out sustainable production and which are characterised by maximum energy efficiency, new-generation products and production processes, new de-manufacturing patterns, sustainable logistics is of key importance to achieve the objective of efficient and sustainable manufacturing.

The recently undertaken initiatives also reflect the willingness of some regions to establish a more efficient and eco-friendly industrial policy based on a systems approach, which requires the development of a portfolio of innovative actions as well as establishing new forms of collaborations. The Pilot Plant for De-Manufacturing of Mechatronics in which is briefly presented next is a concrete example of initiative focused on de-manufacturing of mechatronics. Other examples of regional practices are discussed in more detail in the two recent RIM Plus Thematic Reports⁶.

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The Pilot Plant for De-Manufacturing of mechatronics is undertaken by the Institute of Industrial Technologies and Automation ITIA CNR Milan and is co-funded by CNR and Lombardy Region.

One of the core themes of the Research Institute ITIA-CNR Milan is industrial sustainability. The Institute has launched the pilot plant in 2013 as part of the framework agreement between the Council of National Research and the Lombardy Region to support the competitiveness of the manufacturing sector.

With the help of the pilot plant, the Institute aims to run experiments with manufacturers' products to assess the potential of recycling and remanufacturing business models (automotive, white goods, telecommunications).

The goals of the pilot plant are to:
1. Demonstrate technology to companies and offer innovation services
2. Support machine builders in developing new technologies
3. Support experimental research in new projects
4. Support the learning factory concept
5. Aggregate internal multi-disciplinary teams of researchers working on common topics and national partners operating in the same research area

Currently, the activities of setting up the functioning of the pilot plant are ongoing, with de-manufacturing companies participating in an “industrial interest working group”. A further work stream is the building of an “innovation community” around the pilot plant.

Source(s): [http://www.itia.cnr.it](http://www.itia.cnr.it)

Fifth RIM Plus Workshop on Supporting Advanced Manufacturing at the Regional Level (Brussels, 17 July 2014).

Overall the RIM Plus results confirm that in the EU15 regions there has been more evidence of good practice examples of advisory services which are relevant in relation to advanced manufacturing. A concrete example of regional support includes the Scottish Manufacturing Advisory Service (SMAS), which supports SMEs in the manufacturing industry with expert advice, one-to-one support, training and events in order for the businesses to achieve more cost-effectiveness, productivity and reduced carbon emissions.
Scottish Manufacturing Advisory Service

Set up in 2006, SMAS is a dedicated programme of support for the manufacturing industry, primarily targeted at small and medium sized enterprises (SMEs). SMAS provides expert advice, one-to-one support, training and events for manufacturing businesses. In terms of cost effectiveness, the programme of support (including SMAS) is predicted to generate cumulative discounted GVA of £174m (€205m) over the ten year time horizon.

The starting point for each manufacturing business interested in their services is the free manufacturing review, which is designed to identify ways to improve the productivity and competitiveness of a business. SMAS can help manufacturing businesses in Scotland to: review of current business operations (Manufacturing review, Supply chain and Procurement); improve the way they do business (Improve the layout, Quality and delivery and Streamline the business); and develop the manufacturing business (Develop Workforce, Strategy, Product development and Lean manufacturing).

The evidence from supported companies indicated that the support is making a contribution to carbon reduction goals and improved efficiency. A case study of a company known as ‘BPI Polythene’ specialised in manufacturing and recycling plastics for use in packaging and other applications across numerous industry sectors points to the effectiveness of provided support. “SMAS has been pivotal in helping turn this site into the success that it is today.”


Important steps are also taken in some regions that committed to promoting circular economy through a portfolio of measures or formally recognised it as a priority in their regional strategies. According to the information provided by the RIM Plus correspondent for Basque Country, there have been several actions undertaken to accelerate the development of circular economy. In summary, the following examples show the extent of commitment of the Basque Country in the area of circular economy:

- Tax deduction in green technologies' acquisition (Basque firms can obtain of 30% reduction of related costs in corporate income tax);
- The support to the Basque Ecodesign Centre (for more detailed information see Section 2);
- Advisory service to local authorities on how to turn the Basque Green Public Procurement Programme into practice (the priority focus is placed on the use of sustainable and recycled materials);
- The Basque technical legislation on the construction and demolition waste which regulates new uses of products based on recycled materials; and
Along the same lines of reinforcing the regional policy commitment to the circular economy, the following example shows the importance of circular economy in a region of Southern Finland (Päijät Tavastia) which has been recognised as a priority in the Regional Innovation Strategy and subsequently Regional Development Plan. The region of Päijät Tavastia designed its first Regional Innovation Strategy for 2009-2015 focusing on three major fields: environment, design and practice-based innovation. In 2011-2012, based on a regional policy diagnosis performed within the INTERREG project FRESH the region added an eco-innovation component, focusing on promoting the field of sustainable construction as a core sectoral asset of the region.

The objectives of the Eco-innovation component include the following actions:

• to deepen and diversify the sustainable construction success stories of the region;
• to speed up the uptake of the EU-level construction products regulation (305/2011/EU-CPR) in order to renew and strengthen the sustainable construction products industry;
• to reduce regional energy needs and imports from the perspective of the sustainable construction sector; and
• to internationalise research, prototype and skills creation in the sector through quality partnerships and targeted actions.

With regard to the future funding, it is also important to note that the eco-innovation component of the RIS will be financially supported through the 2014-2020 Regional Operational Programme.

2. Cooperation and involvement of stakeholders

2.1 Governance of circular economy support

The measures designed and implemented as a first step towards the transition to circular economy are often initiated and implemented by public sector organisations or governmental agencies. Overall these instruments have been mostly developed as stand-alone measures targeting often a single beneficiary.

Spurring innovation activities through more sophisticated regional support measures and initiatives requires new reinforced partnerships. Expanding efforts to engage all relevant stakeholders from industry, clusters, academia, intermediary business institutions, regional authorities, regional innovation (development) agencies, chambers of commerce and industry, investors, business angels is central to the regional development goals of achieving the transition towards circular economy.

The examples presented below show the cooperation at different levels of governance as well as involvement of local and regional stakeholders in management and implementation of instruments which are relevant in relation to circular economy.

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7 See: http://www.ihobe.net/Noticias/Ficha.aspx?IdMenu=07a02482-9af6-4d77-92e2-e9b4b35d6691&Cod=5fac788f-981d-45d1-85de-e2a16089e293

8 See http://www.freshproject.eu

2.2 Regional practices

The example of Scottish Recycling Fund shows close cooperation established at regional level between the Zero Waste Scotland (funded by the Scottish Government to support the delivery of its Zero Waste Plan and other low carbon and resource efficiency policy priorities) and Scottish Enterprise (established to support Scottish companies to compete, helping to build globally competitive sectors, attracting new investment and creating a world-class business environment).

Scottish Recycling Fund

The Scottish Recycling Fund (SRF) is a £3.8M fund established by Zero Waste Scotland and Scottish Enterprise to develop or expand materials reprocessing capacity and remanufacturing facilities in Scotland.

The fund is able to offer loans, repayable over a 3-5 year period on commercial terms, to organisations that are interested in developing the relevant infrastructure in Scotland.

While loans are primarily for capital investment, they can include working capital. Waste materials eligible for the fund are plastics, tyres, textiles, glass, industrial food & drink processing waste, waste electrical and electronic equipment, plasterboard.

The specific objectives of the SRF are as follows:

• To establish key reprocessing infrastructure in Scotland;
• To divert materials from landfill and other waste treatment into high value end uses and achieve related carbon savings;
• To develop infrastructure for ‘problem waste streams’ in Scotland;
• To generate additional jobs and added value in Scotland from these activities;
• To support a range of projects, which are unable to access funding from other commercial sources; and
• To help in the development of more circular business models in Scotland.

Source: http://www.zerowastescotland.org.uk/content/scottish-recycling-fund

Another example of Eco-Innovation Call in Aquitaine illustrates the involvement of cluster organisations. In practice, the Regional Innovation Agency is overseeing the implementation of projects with the support from a local cluster focused on eco building (known as CREAHd) and two competitiveness clusters, namely AVENIA (the activities of which are concentrated on geoscience for energy and the environment) and WYLOFUTUR (specialised in products and materials from the forest).

The case of Business Development and Technology Transfer Corporation of Schleswig-Holstein (WTSH) which the main business development agency of the Federal State of Schleswig-Holstein and overseeing the implementation of support for environmental innovations is interesting, precisely because of its ownership structure which is not based on a sole proprietorship. The WTSH is owned the Federal State of Schleswig-Holstein, the chambers of industry and commerce as well as the institutions of higher education from the state.

Other examples concerning the pilot and demonstration types of support show new ways to develop innovations by involving knowledge institutions and
people through Living Labs and by building innovation communities. One of recent projects of this kind is briefly presented below.

**Paper Province 2.0** A large-scale testbed for forest-based bioeconomy (North Middle Sweden)

In 2013 a three year project was granted by VINNOVA VINNVÄXT Programme to the Paper Province. The goal of the Paper Province 2.0 project is to within 10 years be a leading European centre of competence for forest bioeconomy by developing a large-scale demonstration where a systemic approach and utilisation is central.

The objective is to support the development of new products and services based on forestry value chains. Transnational networking is also promoted that provides access to a wide range of expertise and companies in various industries. Higher value added and regional growth is created by the inclusion of needs and users.

The implementation is structured according to the following three approaches. First, evaluate the residual currents of mills from a service perspective. The service perspective on the products included end-use and optimisation of service value and opportunity for pooling developed. Second, the systemic approach to develop new and existing services and processes linking forest production units and other actors in the region. Third, information gathering around new technologies, but also new ways to develop innovations by involving knowledge and people, for example via Living Labs.


With regard to multi-level governance, the example of Environmental Technology for Growth initiative in Stockholm shows close cooperation between the national research institute, technology centre and local administration as a part of the strategy to support clean tech companies and establish a cleantech cluster in the Stockholm region.

**Environmental Technology for Growth (Stockholm)**

Environmental Technology for Growth (Miljöteknik för tillväxt) is a three year project (2009-2011) to stimulate growth and internationalisation of small and medium-sized companies providing environmental technology and other solutions for a sustainable development in the Greater Stockholm Region (Stockholm-Mälardalen).
Environmental Technology for Growth (Stockholm) cont.

The project has moved on to a new phase where the partnership behind the project is currently working on a pre-study for the regional structural funds period of 2014-2020 to further investigate the formation of a cleantech cluster in the Stockholm region.

Important activities include: internationalisation, product development, business development and financing. A test facility for research and tests on water purification has been established, which has received international attention and stimulated company cooperation for internationalisation. Another test facility and showcase for renewable energy sources has been established in the city of Stockholm.

The project is administered by the Swedish Environmental Research Institute (IVL) and the Stockholm Environmental Technology Centre (SMTC). It had a total budget of €2.25m. About €0.9m were provided by the ERDF, €0.6m by IVL, €0.15m by Stockholm municipality and €0.6m by the National Agency for Economic and Regional Growth.

Over three years, about 140 companies have participated in the project. Of these, about 30% have increased their exports and 22 new products have been tested and developed. The project has also contributed to 43 new jobs being created, 21 new companies established.

Source: https://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor/node/3324

The involvement of stakeholders from different levels of governance during the actual the selection of projects submitted in response to the call for expression of interest is illustrated by the example of the recent call "Advanced manufacturing" launched by the Poitou-Charentes Region. Concretely, the selection committee consists of representatives from the regional authorities, Competitiveness Pole of Eco-Industries, national administration, Regional Chamber of Commerce and Industry and BPIFrance, which is one of the main actors providing funding opportunities and support, as well as technical, financial and marketing support to businesses carrying out innovative projects.

Launched in February 2013, the French Institute for Circular Economy10 is an example of multi-stakeholders platform. Among the members are also the three Regional Councils of Aquitaine, Haute Normandie and Île-de-France. The overarching objective of the Institute is to promote circular economy. In concrete terms, a white paper will be drawn up, in addition to a series of workshops with a view to presenting a draft legislation on circular economy in 2017.

Established in 2011, the Basque Ecodesign Centre11 is an example of partnership framework between the private sector and the Basque Government with the view to foster the design and implementation of innovative ecodesign projects.

11 See: http://www.basqueecodesigncenter.net
The Basque Ecodesign Centre was established at the initiative of six private firms from the Basque Country and Ihobe, the Basque Government’s Environmental Management Company, which is the coordinator of the Basque Ecodesign Center project. Since July 2013, Eroski has become the eight private member in the initiative and the first company present from the food sector.

The establishment of the Centre has to be seen in the light of the Basque Sustainable Development Strategy (EcoEuskadi 2020) especially in reference to the resource efficiency in order to progress towards innovative, sustainable and competitive industry as well as the shortage of raw materials and the growing world demand.

The objectives to be realised by the Basque Ecodesign Centre can be summarised as follows:

• To ensure that the Basque Country is a cutting-edge region and a benchmark in the European Union in the field of ecodesign;
• To consolidate the competitiveness of the participating companies by means of acquiring and applying state-of-the-art ecodesign know-how;
• To foster product eco-innovation, by means of cooperation among companies, the University of the Basque Country (UPV-EHU) and the leading international knowledge centres; and
• To integrate the environmental factor in the supply chain of the participating companies.

Source: [http://www.basqueecodesigncenter.net](http://www.basqueecodesigncenter.net)

A similar measure is found in the Central Denmark region, where the Cradle-to-Cradle principles are being mainstreamed into regional companies and public organisations through a dedicated funding line for advisory services towards adopting such new practices. Cradle-to-cradle means going even beyond the recycling and re-use paradigm, and incorporating the manufacturing of products and provision of services with the vision to develop them as future materials and nutrients that can re-enter the environment.

**Rethink Business (Central Denmark Region)**

Rethink Business is a 3 year (2012-2015) regional project focusing on trying to establish new business models on a sustainable platform. The project is initiated by Central Region Denmark which is one of five administrative units in Denmark.

Central Denmark region established a funding scheme with the support of ERDF funds through which municipalities and SMEs at all levels of the value chain can receive advisory services on how to use the mindset behind Cradle-to-Cradle (C2C) and circular economy to generate growth and profits through sustainable, symbiotic partnerships.
Rethink Business (Central Denmark Region) cont.

A team of consultants established platforms for providing advice for companies and municipalities. They perform the screening of the participating companies in order to identify opportunities in the value-chain where the companies can strengthen their business development and pursue growth. The screening is followed by an action plan. Municipalities can use the funds allocated by the Central Denmark region to test innovative public-private partnerships that are based on C2C as a method of business development.

The measure has not been evaluated yet and the initial results can be summarised as follows:

- 40 companies have been screened by the consultants to identify new products based on new design concepts and new materials or new cross-sectoral partnerships to renew the companies’ position in the value chain;
- 5 municipalities out of the targeted 19 have engaged in different circular economy projects involving public procurement and public-private partnerships; and
- the development of learning materials with good practice examples is ongoing.

Source: http://en.rethinkbusiness.dk

With regard to cross-border cooperation, the example of Öresund Smart City Hub illustrates the regions’ willingness to cooperate across the borders, in addition to the involvement of municipalities, regional authorities, universities and cluster organisations from the participating regions.

Öresund Smart City Hub (Öresund, DK and SE)

Öresund Smart City Hub is a Swedish-Danish collaboration project including municipalities, regions, universities and cluster organisations on both sides of Öresund. In a “Smart City” computing / IT solutions are optimised with cleantech in order to create a sustainable city with a high quality of life. The project works in three different Smart City areas. During the autumn of 2013 the project developed an innovation platform for street lights and in the spring 2014 cooperation in the areas of mobility (cycling) and water management were initiated.

The two cluster organisations involved in this cross-border innovation platform have learned that they have different approaches to promoting innovative public procurement. While Sustainable Business Hub has a more general discussion with stakeholders about the challenges and solutions needed, at CLEAN (previously Copenhagen Cleantech Cluster) the challenges are identified after interviews/discussions with selected interlocutors. Currently, a procurement process is under way in the capital region concerning water sensors, where the "problem owners" are the municipally-owned water companies. As part of the project discussions have been taking place with the water companies, and SBH is working to include Swedish actors in the process.

Source(s): http://www.oresundskomiteen.org/oresund-smart-city-hub
https://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor/node/4359
3. Main results and key lessons from implementation

3.1 First steps in transition towards circular economy

Several of the measures identified in this report as first steps in transition towards circular economy have not been appraised. For instance, the measure to support eco-innovation in SMEs in the West Region of Romania was launched in 2014, which allows for little insight into its outputs and impact for the moment.

Existing evaluations of the presented regional support measures also very rarely provide assessments of long term results. Overall achievements of these programmes tend to be incremental improvements in the regional companies’ processes, products and services, and their adoption of cleaner technologies. For example, the support for SMEs in the Kujawsko-Pomorskie Region in Poland was evaluated to have positive but not very significant results.

In many cases, direct funding provided to individual SMEs to absorb new technologies needs to be complemented with additional instruments. On the whole, it appears that several needs of the regional stakeholders could be covered through a more integrated approach. Subsequently, this would help to achieve wider impact especially in interdisciplinary areas of the circular economy.

3.2 Systemic approaches

According to the recent analysis carried out in the framework of the RIM Plus project (RIM Plus Final Report, 2014) the number of dedicated demand-side innovation measures and other more sophisticated support measures is still very low, however, the share of good practice is comparatively higher than in the case of most commonly implemented support measures. Although it is evident that the focus of RIM Plus is not exclusively on monitoring regional initiatives which are relevant in relation to circular economy or eco-innovation, it is most likely that credible actions in these areas would receive more positive appraisals as well.

One of the main lessons to be drawn from the examples identified in this report is that enhanced partnerships and a range of complementary instruments are prerequisites for successful transition towards circular economy.

Industrial symbiosis is a network-based cooperation between companies in a region that involves recovery, re-use and recycling of by-product resources, including waste materials, water or heat, among the participating businesses in order to cut operational costs as well as to reduce environmental pressures from production. However, initiatives of industrial symbiosis programmes are still scarce in the EU, as they imply close cooperation and trust between the network members. Landskrona Industrial Symbiosis Programme (LISP) in Sweden and Kalundborg Symbiosis in Denmark are two programmes that have attempted to establish such cooperations.

LISP was an initiative of a local Institute for Environmental Economics, while the Kalundborg Symbiosis programme was driven bottom-up by the businesses and the regional organisations as a response to environmental regulation. In Kalundborg, the push to enhance competitiveness and reply to environmental pressures was considered one of the important factors that bound the participating network members into 25 productive exchanges of resources. While in Landskrona, the development of the programme was driven mainly by an academic knowledge perspective, which lead to the establishment of only one exchange project. One lesson to draw is therefore that industry symbiosis initiatives need to be firmly grounded into
regional needs and have the buy-in and trust of network participants, in order to be more impactful. 12

The Scottish example of Recycling Fund puts a spotlight on the importance of developing a range of support programmes, campaigns and other interventions as a part of the Government strategy to prevent waste, promote recycling and develop markets for valuable products. The support provided by the Scottish Manufacturing Advisory Service has been evaluated and made a contribution to carbon reduction goals and improved efficiency. The supported companies benefited through skills improvements; process efficiency gains; improvements in productivity, staff engagement and company culture; increased profitability; and reduced carbon emissions.

Also, the implementation of more sophisticated policy responses, such as Green Public Procurement by the regional authorities of Lombardy, emphasises the importance of undertaking mutually supporting action lines.

From the Grants4Growth initiative, which is delivered through Local Enterprise Partnerships in the East of England, we have learned that there are several case studies that show the success of this instrument, however there is no evaluation available. The results of some other initiatives, such as for example the Business Growth Carderdale project are still too early to judge.

Grants4Growth (East of England, UK)

Grants4Growth is a new £8.5m (€10.2m) project delivered through Local Enterprise Partnerships in the East of England. It provides: capital grants for SMEs to purchase/install efficient new processes, production facilities and clean tech, helping them to invest-to-grow; revenue grants and other direct assistance to support SMEs to promote products/services such clean technology and renewable energy.

Grants4Growth portal is part of the Local Enterprise Growth & Efficiency Programme, managed by Breckland Council. The main funder is the European Regional Development Fund via the East of England Competitiveness Programme administered by the Department of Communities and Local Government.

Grants4Growth is delivered through participating Local Enterprise Partnerships. LEPs are business-led partnerships between local businesses, academia, voluntary organisations and local government with a remit to boost the local economy and create new jobs. A dedicated local Business Broker is embedded within each participating LEP to help your business access our grants.

One of the case studies is about an independent ready mix concrete supplier, known as Thorney Ltd. Company management identified a gap in the market to provide low-grade ready mix concrete, derived from waste and by-products. The newly acquired equipment is used to recycle waste concrete beams from other companies, removing and separating concrete and metal components for recovery and recycling.

Source(s): [http://www.grants4growth.org.uk/examples](http://www.grants4growth.org.uk/examples)
https://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor/node/3558

Business Growth Calderdale Project (Yorkshire & the Humber, UK)

Launched in April 2012, Business Growth Calderdale supports local businesses who are aspiring to grow, become more competitive and develop new products and services by tailoring support packages around each business to help them achieve their ambition and plans for growth.

The Business Growth Calderdale Project’s mission statement is to: “Build a great community of businesses, each helping the others grow and build a stronger Calderdale business community”.

Business Growth Calderdale is a partnership project between Calderdale Council, Bradford University, Leeds Metropolitan University and Community Partnership Solutions Ltd. C-Tech Innovation Ltd have been contracted to deliver Environmental Business Support as part of the Business Growth Calderdale project.

Councillor Janet Battye, Leader of Calderdale Council, said “Business Growth Calderdale has been tailored to the specific needs and aspirations of local businesses, and as such the project is a trailblazer in the area. There will be many valuable outcomes: businesses will get the immediate assistance of university expertise and the local economy will get the long term benefit of a sustained relationship with the Higher Education sector”.

One of the forthcoming activities concerns the launch of ‘100 Days of Eco-Pledges’.

The Environmental Business Pledge is Calderdale Energy Future’s free certification and advice scheme for local businesses to show their environmental commitment to customers, employees and investors. It sets out a plan for the Borough to become a resilient low carbon economy achieving a target of 40% reduction in carbon emissions by 2020 from a 2005 baseline. Business Growth Calderdale is delivered to businesses for free and part funded by the European Union. It is planned that by 2013 the project will support some 300 local businesses, create around 120 new jobs and safeguard a further 150 jobs. Business Growth Calderdale is part financed by the European Union.

The project has attracted £1.1m (€1.37m) from the Yorkshire and Humber European Regional Development Fund (ERDF) Programme 2007-2013.

Source: [http://www.businessgrowth Calderdale.co.uk](http://www.businessgrowth Calderdale.co.uk)

According to the evaluation of the competitiveness poles policy in Wallonia, the existing poles are in line with the regional economic development strategy which is focused on the integration of stakeholders and measures around a set of lead areas. However, the evaluators underlined that an effort should still be done to better integrate the competitiveness poles to the regional economic system, precisely because...
of the lack of sufficient linkages developed between the economic/cluster policies and the Walloon sectoral policies (e.g. agriculture, environment, health).

**Walloon Competitiveness Pole - GreenWin (Wallonia, BE)**

The Walloon region has launched since 2005 competitiveness poles that have since then become the backbone of the regional economic development policy. The GreenWin cluster was founded in 2011 and is among the six clusters of the region.

GreenWin focuses on three strategic axes that focus on improving the life cycle of the products by saving of materials and energy, recycling and the use of renewable resources.

The cluster encompasses a network of over 150 members, out of which 135 are enterprises. The cluster offers a networking platform, support for project development among members and for obtaining financing and international visibility.

In 2013, the activities taking place within cluster’s perimeter represent over 45,000 jobs in Wallonia and Brussels, exports accounting for nearly 30% of the economy. Moreover, GreenWin supported the development of 21 projects that are approved and funded by the Walloon Government for a total budget of over €60 million.

Source: [http://www.greenwin.be](http://www.greenwin.be)

Since 2005, Wallonia has been undertaking actions in support of the competitiveness clusters. The NEXT Programme13 that was initiated in 2012 by the government of Wallonia had an objective to test the industry interest in activities related to the reuse of products and materials as well as development of new business models. In 2013, the government took a decision to formally launch the NEXT Programme with a focus on resource efficiency and by doing so circular economy became a cross-cutting approach for the industrial policy of Wallonia with the view to increase competitiveness, support economic development and create new business opportunities.

The SRIW, which is a public investment company in Wallonia, is in charge of development of the Programme. The three main pillars of the programme include: enterprises, education and international network. This example shows the regional government’s willingness to achieve economic gains and increase the competitiveness of Walloon companies through a dedicated programme in support of circular economy.

Last but not least, from the implementation of pilot and demonstration facilities we have learned that developing innovation community around this type of facilities based on a systems approach is central to their success and sustainability in the future.

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4. Conclusions

With regard to rationale for actions at regional level

This report put a spotlight on so-called ‘eco-innovation’ paradox which means that regions where the highest potential to benefit from the transition towards circular economy are characterised by the limited capacity to implement innovation enabling the shift. One of the main findings emerging from this report confirms that some regions have undertaken first steps with the view of developing absorptive capacity for circular economy and promoting the change towards sustainable production.

Adopting a systems approach and achieving the transition towards circular economy is a complex and long term process. Among the different policy responses adopted across the EU regions, there are measures providing eco-innovation and eco-conception support to SMEs, development of cleantech solutions, green public procurement and advanced manufacturing initiatives, etc.

The rationale behind such instruments is to promote cleaner production and consumption as well as catalyse innovation in the economy. Particularly, the key challenge will be to design and ensure efficient implementation of a portfolio of measures which support each other towards achieving a common objective. The more policy responses become sophisticated and the stronger linkages exist between the different instruments, the degree of challenge of ensuring the implementation of effective measures in support of circular economy also increases.

With regard to cooperation and involvement of stakeholders

The examples presented in this report confirm that achieving the successful transition towards circular economy requires the development and testing new forms of partnerships. The existing evidence shows that there is no one single governance model that must be followed and adopted across the EU regions. On the contrary, finding the right governance model and streamlining the delivery mechanisms by using the practices adopted elsewhere and adapting them to the regional context is a challenge that many EU regions are still facing. A recent trend which we observe in some regions, is the launch of living labs, in addition to other initiatives aimed at developing multi-stakeholders’ platforms and building innovation communities.

With regard to main results and lessons learned

Overall the key factors which will determine the extent of success in terms of transition towards circular economy include: the design and implementation of a range of support measures as a part of a comprehensive strategy, the existence of close cooperation between different actors of innovation system as well as exploring and testing new forms of partnerships.

While some regions are forging in this direction, other regions with less tradition and experience in innovation policies have also started reviewing the existing instruments and re-thinking the support measures in order to better leverage public investment during the 2014-2020 programming period.

To conclude, there is a need for a more comprehensive research on regional and local aspects of the transition towards a circular economy which justifies and calls for an action to be taken at the EC level. Regions and cities have a potential to become leaders and catalysts of this shift, however, their efforts need to be seen in the context of wider national and EU level policies.
Appendix A

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