Eco-innovation in Latvia

EIO Country Profile
2016-2017
The Eco-Innovation Observatory functions as a platform for the structured collection and analysis of an extensive range of eco-innovation and circular economy information, gathered from across the European Union and key economic regions around the globe, providing a much-needed integrated information source on eco-innovation for companies and innovation service providers, as well as providing a solid decision-making basis for policy development.

The Observatory approaches eco-innovation as a persuasive phenomenon present in all economic sectors and therefore relevant for all types of innovation, defining eco-innovation as:

“Eco-innovation is any innovation that reduces the use of natural resources and decreases the release of harmful substances across the whole life-cycle”.

To find out more, visit [www.eco-innovation.eu](http://www.eco-innovation.eu) and [ec.europa.eu/environment/ecoap](http://ec.europa.eu/environment/ecoap)

Any views or opinions expressed in this report are solely those of the authors and do not necessarily reflect the position of the European Commission.
**Acknowledgments**

This report has been prepared with the input from several interviews and e-mail correspondence with:

- Rudolfs Krese – Investment Director at ZGI Capital
- Maija Kale – Advisor on sustainability, innovation and research at Nordic Council of Ministers Office in Latvia
- Martins Jansons – Head of Innovation Policy Unit at Ministry of Economy of Latvia

**A note to Readers**

Any views or opinions expressed in this report are solely those of the authors and do not necessarily reflect the position of the European Union.

A number of companies are presented as illustrative examples of eco-innovation in this report. The EIO does not endorse these companies.

The report is based on an **updated methodology for calculating the Eco-Innovation Index**, which has also been applied retroactively to all previous years, hence the outcome in the Eco-Innovation Scoreboard (Eco-IS) for 2017 presented in this report **can be compared with the analysis in the previous reports to a limited extent**.

Comments and suggestions on this document can be sent to Asel Doranova asel.doranova@technopolis-group.com

This brief is available for download from https://ec.europa.eu/environment/ecoap/country_profiles_en
# Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>1</td>
</tr>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>Eco-innovation performance</td>
</tr>
<tr>
<td>2</td>
<td>Selected circular economy and eco-innovation areas and new trends</td>
</tr>
<tr>
<td>3</td>
<td>Barriers and drivers to circular economy and eco-innovation in Latvia</td>
</tr>
<tr>
<td>4</td>
<td>Policy landscape in Latvia</td>
</tr>
<tr>
<td>ANNEX: Policy measures addressing circular economy and eco-innovations in Latvia</td>
<td>13</td>
</tr>
</tbody>
</table>
Summary

The Eco-Innovation Scoreboard 2017 ranks Latvia 22nd among the 28 EU Member States with a score of 71 points while the EU average is 100. The overall position of Latvia has decreased (from 20th place in 2015). Latvia's eco-innovation inputs are 41% of the EU average level and in terms of activities the performance of Latvia is also modest, reaching 41% of the EU average rates. At the same time, eco-innovation outputs and socioeconomic outcomes surpass the EU average. This situation is based on the relatively good performance of the country in terms of eco-innovation-related academic publications and employment rates in eco-industries. Also data shows strong performance with regards to turnover in eco-innovation-related industries.

The drivers for eco-innovation and circular economy development in Latvia are energy and resource efficiency targets of the EU’s Europe 2020 strategy, investments of the EU Structural Funds, assistance of EEA/Norway Grants, prioritisation of bioeconomy, smart materials and sustainable energy as research fields and availability of natural resources such as forests, water and soil. Also the work of NGOs has helped to increase societal awareness about circular economy.

The main barriers to the development of eco-innovation and circular economy are lack of motivation and resources available to businesses. Also societal awareness about issues of sustainable consumption and production is low and it prohibits companies from investing in new products or services. Several foreign financial assistance instruments are available, which is a good thing, however, it prohibits long term local policy development, because there is an over reliance on foreign funds.

Overall, although positive developments can be identified, a lot remains to be done in businesses and government sectors, as well as regarding societal awareness towards social innovation and circular economy.
Introduction

In recent years Latvia has demonstrated stable economic growth patterns and in 2017 reached highest GDP growth (4.5%) in last 6 years (Central Statistical Bureau of Latvia, 2018). Latvia has started deploying investments of the 2014-2020 EU Structural Funds and most likely this will further stimulate the economic development. Overall investments will be 4.4b EUR (Ministry of Finance, 2018). According to the SF investment plan, together with national co-financing, Latvia will invest around €550 million in research, development and innovation (RDI), €565 million in transition to a low-carbon economy and €733 million in environmental protection and resource efficiency over the next programming period (Ministry of Finance, 2014). This influx of funding is certainly of great importance for future eco-­innovative developments in the country.

In terms of the dominant eco-innovation challenges, energy sector remains one of the key areas, where transitions are underway. Latvia has an abundance of renewable energy resources (wind, solar, hydropower, geothermal) that are currently not fully exploited to meet the local energy demand. The energy sector is still characterised by strong dependence on energy imports (mainly natural gas) that account for around 60% of overall consumption. Latvia has set a mandatory target to ensure that renewable energy sources reach 40% of the gross national energy consumption, and a minimum of 10% in the transport sector, by 2020 (National reform programme, 2011). These targets are considered to be realistic and achievable, so more eco-innovation applications to address these goals can be expected.

Another pertinent problem is low energy efficiency in buildings. In contrast to the majority of EU countries, in Latvia the housing stock built in the period 1946-1990 is of lower quality and lower energy efficiency. The majority of inhabitants of Latvia live in such dwellings. While there have been already measures implemented to improve heat insulation of multi-apartment buildings, social residential and public buildings, there is scope for more activities in this area and further promotion of eco-innovative solutions in the construction sector. There are several problems with the implementation of the program and low societal awareness is one of them.

Equally, the implementation of new technologies and processes for improving energy efficiency and material efficiency in industrial production is a necessary precondition for moving towards low-carbon economy goals. As the monitoring report of the National Development Plan 2014-2020 outlines, Latvia is stagnating in terms of efficient use of natural resources, and the last five years have marked a negative downward trend in this aspect (Cross-sectoral Coordination Centre, 2015). Latvia’s target for 2020 is to gain €540 of GDP per tonne of used natural resources. In 2013, this indicator reached only €370 per tonne, which significantly lagged the 2014 target value standing at €480 per tonne.

In addition, there has been an absence of a systematic approach to addressing recycling and waste issues. On average, one inhabitant in Latvia produces around 301 kg of waste (2012 data), whereas in Germany, Denmark, Cyprus and Luxembourg this figure is double. Although the generation of waste is modest in Latvia, the country cannot be proud of the current recycling rates. Around 80% of waste is dumped in landfill in Latvia (Vides Vēstis, 2016). Most of the environmental challenges related to waste are still addressed with ‘end-of-pipe’ solutions, e.g. wastewater filtering; hence there is scope for adoption of eco-innovative waste management solutions in this area. The awareness about issues of sustainable consumption and production is low and this does not motivate companies to offer new eco-innovation products and services.
1  |  Eco-innovation performance

The analysis in this section is based on the EU 28 Eco-innovation Index (Ecol Index) for the year 2017. The Eco-innovation index demonstrates the eco-innovation performance of a country compared with the EU average and with the EU top performers. Ecol Index is a composite index that is based on 16 indicators which are aggregated into five components: eco-innovation inputs, eco-innovation activities and eco-innovation outputs as well as environmental outcomes and socio-economic outcomes.

Figure 2.1 EU27 Eco-innovation Index 2017, composite index

The overall position of Latvia in Eco-Innovation Index 2017 has declined and Latvia ranks the 22nd (71 points) compared to 2015 when it took 20th place. The latest figures show Latvia’s eco-innovation performance ranks above and alongside Estonia, Romania and Croatia, but lagging behind Lithuania.

Figure 2.2. demonstrates five components of the Eco-Innovation index for Latvia. Eco-innovation inputs constitute 41% of the EU average. Similarly as in previous report in 2015 all component indicators in this category show weak foundations for eco-innovation development when compared to the EU average. Lower eco-innovation input indicators exist for Bulgaria, Croatia, Cyprus, Hungary, Lithuania, Malta and Slovakia. The government’s environmental and energy research and development (R&D) appropriations and outlays, as share of GDP in 2016, amounted to 54% of the EU average. The total R&D personnel and research staff, as a share of total employment in 2016, was only 25% of the EU average. The total value of green early-stage investments per capita in the period 2014-2017 was 45% of the average EU figure demonstrating increase compared to previous report in 2015. This result is in line with observation made from...
interviews with key stakeholders who concluded that recently investments in green technology start-ups have intensified.

In terms of eco-innovation activities, Latvia scores at around 41% of the EU average rates (decrease from 60% in 2015). On this indicator Latvia outperforms Belgium, Bulgaria, Cyprus, France, Netherlands, Poland and Romania, but is lagging behind Estonia and Lithuania. The number of firms that introduced an innovation with environmental benefits obtained within the enterprise and firms that introduced an innovation with environmental benefits obtained by the end user are below EU average rates (33.9% and 42% respectively). The number of ISO 14001 registered organisations per million of population constitutes 56.6% of the EU average.

In eco-innovation outputs Latvia is a slightly above the EU average rates. The output score is largely based on the good performance in eco-innovation-related academic publications, which in 2016 reached 290% of the EU average. This could be explained by the fact that eco-innovation and circular economy related topics are among Smart Specialisation Strategy priority fields and public funding delivers these research results. Other two component indicators – eco-innovation related patents and eco-innovation related media coverage are below the EU average (25% and 31% respectively).

The overall score for resource efficiency for Latvia stands at 75% of the EU average, demonstrating increase from 70% in 2015. According to the calculations, material productivity rates are low in Latvian enterprises and stand at 13% of the EU average. However, in terms of energy productivity and greenhouse gas (GHG) emission intensity Latvia is well in line with the EU average rates (76% and 89% respectively).

As in previous years, for the indicator of socio-economic outcomes Latvia demonstrates performance which is a little above (102%) the EU average. Compared to previous report exports from eco-industry products have decreased relative to the EU average (from 51% in 2015 to 46% in 2016). The strongest performance can be observed in the employment rates in eco-industries, which is 159% of the EU average. Eco-industries also comprise a remarkable share of the total turnover (revenue) across all companies, which is 135% of the EU average rate.

**Figure 2.2 Components of the Eco-innovation index for Latvia, 2017**
2 | Selected circular economy and eco-innovation areas and new trends

The concept of circular economy has been increasingly discussed in Latvia in recent years. Policy makers and various non-governmental organisations have facilitated this by organizing information events and promoting publicity in media. Concepts of reuse and sharing are becoming more popular as new social entrepreneurs and traditional companies offer new services (for example, donation of unnecessary things) or products (for example, production of clothes from waste) based on these ideas. However, the overall developments are on the micro level rather than systemic (Kale, 2018) and the lack of understanding prohibits innovations in this sector (Jansons, 2018).

Such sectors as energy efficiency in residential buildings, renewable energy, bio agriculture, electric vehicles and eco design continue development and there are no big changes compared to previous report. Several sectors experience new developments because of the new EU Structural Funds investments for the period 2014-2020. For example, new clusters receive funding and it is planned to build charging infrastructure for electric vehicles.

Green technology start-ups develop in various fields. Overall, the industry is developing and projects related to circular economy and eco-innovation begins to establish their stable place in the flow of new ideas. Venture capital market has recognised the potential of eco-innovation and increasing flow of new ideas and began to invest more in this industry. The most promising eco-innovation start-ups work in cooperation with research institutions (Krese, 2018). Research institutions also engage in work with start-ups. For example, since 2017 Riga Technical University is a partner in European Innovation and Technology Institute initiative Climate KIC and operates an accelerator for teams aiming to develop projects in eco-innovation.

Such topics as energy efficiency, sustainable transport and knowledge based bio economy have been defined as priority science sectors for the period 2018-2021 (Ministry of Education and Science, 2017). As mentioned in previous report, bio economy is also an important part of Latvia’s Smart Specialization Strategy. It seems that research prioritization and investment in these fields is beginning to deliver results, because it is a base for developing new commercialization projects.

Circular economy and eco-innovation areas are also well covered by various newly established and existing clusters, for example, Smart City Cluster of Latvia, Life Science Cluster of Latvia, Green Tech Cluster and Cleantech Cluster (Ministry of Economy, 2017). Several of these clusters are new and this “clusterization” trend demonstrates business development in these areas.

Some developments can be traced in the area of electric vehicles. In 2017 the number of registered electric vehicles grew by 30% and now the total number is 406. With the help of EU Structural Funds it is planned to build 80 charging stations by the end of 2018 (Road Traffic Safety directorate, 2018).

Social enterprise “Second breath”

Social enterprise “Second breath” which operates since 2009 organizes charity and social support projects by operating three charity shops. In these shops people can buy various things
(offering them “second life”) donated by individuals as well as organizations. The income is used for charity and various social support projects. Among other aims, the company helps to avoid production of waste by just throwing away unnecessary or unused items from household and provides opportunity for reuse of various everyday items (clothing, furniture, books, etc.). Therefore the generated impact is both environmental and social as all of the revenue is invested in charity. The items placed for charity should be functional, clean and suitable for further use. The charity shops also try to define what are the most necessary things for particular charity projects. The main values of social enterprise are charity, protection of environment and social responsibility.

Keywords: reuse, charity, social impact.

Internet link: http://www.otraelpa.lv/par-mums/

Source: www.otraelpa.lv

ALINA LLC
ALINA is an early stage start-up company, established in December 2015. ALINA develops human health friendly clay mineral materials to substitute toxic chemicals in building products. ALINA LIFE is a novel, environmentally-friendly and easy to use clay mineral additive, that prolongs the life and improves the striking appearance of eco & natural paint products. Paint manufacturer main benefits (I) Substitute of toxic chemicals in paint products – compliance with European Union regulations to minimize use of toxic chemicals. (II) Decreases rate of product degradation - enhance product competitiveness, while improving performance. (III) Simplified development of non-allergenic, non-toxic and non-carcinogenic products to obtain Eco certification and enter green product market.

Keywords: zero waste, non-toxic, eco-friendly.

Internet link: https://www.alina-premium.com/

Contacts for further information: Solvita Kostjukova, Partner & CEO, solvita@alina-premium.com
3 | Barriers and drivers to circular economy and eco-innovation in Latvia

The main drivers for eco-innovation and circular economy in Latvia remain the energy and resource efficiency targets of the EU’s Europe 2020 strategy. National policy documents refer to these targets and form a basis for policy and respective policy instruments. The investments of EU Structural Funds for the period of 2014-2020 are now launched and this makes an important contribution to the development of these sectors. For example, the Smart Specialization Strategy of Latvia which defines EU Structural Funds investments in research, includes such priority sectors as bioeconomy, smart materials and sustainable energy solutions and investments in research are now taking place. Prioritisation of these fields on the strategic level has to be considered as a major driving factor for the development of this industry and potentially will deliver first results soon.

Assistance of EEA/Norway Grants has been very important driver of eco-innovation in Latvia. In the previous funding period Green Technology Incubator was developed and managed to support many prospective new companies. At the end of 2017 Ministry of Finance of Latvia and the Norwegian Ministry of Foreign Affairs signed the Memorandums of understanding on the Implementation of the EEA and Norwegian Financial Mechanism in 2014 - 2021. In the new financial mechanisms period of Latvia, it is planned to support environmental and climate change management with total investment of 14 millions euro (Cabinet of Ministers of Latvia, 2017). Specific programme conceptions are yet to be developed, however, this will most likely be an important driver for further eco-innovation development in Latvia. Overall, the availability of this and other funding mechanisms has created an increasing interest in eco-innovation, circular economy and bioeconomy among companies (Kale, 2018).

As mentioned in previous report, availability of natural resources such as forests, water and soil remain drivers of eco-innovation in Latvia, especially in such fields as eco tourism, which is gaining its popularity.

As regards the barriers to eco-innovation, willingness and capacity of businesses to innovate can still be considered as hampering factor. There is a lack of motivation among companies to implement principles of circular economy (Kale, 2018). Lack of understanding about the processes of eco-innovation is also a barrier, because sometimes companies think that these innovations
are very expensive. At the same time, examples of companies that have implemented such innovations, demonstrate that they bring large benefits (Jansons, 2018). Slowly this is changing, because as indicated before, new project ideas are developed and receive attention and funding from venture investors.

Previous reports highlighted the fact that societal awareness about issues of sustainable consumption and production is low and this does not motivate companies to offer new eco-innovation products and services. This has not changed much, however, information campaigns and media slowly change the overall attitudes.

Although foreign financial support instruments for eco-innovation are very important for the development of this field, on the other hand it slows local policy development. As mentioned in the previous report, there is a lack of a targeted national policy framework and fragmented support landscape. Also common approach towards improving the understanding of the benefits of eco-innovation and circular economy in different stages of company development is missing (Kale, 2018).

To summarise, the Latvia’s progress towards circular economy and eco-innovation has been slow, but steady and mainly driven by the foreign financial assistance and targets defined by the EU. A lot needs to be done to develop a comprehensive support system for eco innovation.
4 | Policy landscape in Latvia

Eco-innovation and circular economy are topics governed by several ministries - Ministry of Economy, Ministry of Education and Science, Ministry of Environment and also Ministry of Agriculture. Topics related to environment are also discussed in one of the parliaments thematic commissions. Most of the support mechanisms are not specifically targeting eco-innovation and circular economy, but these topics are among others that can receive support. Most of the public funding comes from the EU Structural Funds and other foreign mechanisms. For example, with the support of EEA/Norway grants Green Technologies Incubator operated in Latvia since 2014 and closed its operations at the end of 2017. It has provided pre-incubation and incubation support to 152 teams developing green technologies business ideas. 23 projects have received small grants (Ministry of Education and Science, 2017). The topic of eco-innovation and green technologies will be supported also in the next period of EEA/Norway grants with some changes in the form of policy instruments to be used (Jansons, 2018).

There is no one single policy document in Latvia that is devoted to circular economy or eco-innovation. These topics are discussed in various documents and policy fields and overall the most important policy strategies recognise the importance of these topics. For example, the National Development Plan 2014-2020 includes several green economy and sustainability related aims. In the field of circular economy National Plan for Waste Management 2013-2020 demonstrates the inclusion of main principles of waste hierarchy and aims to decouple economic growth from waste generation and the associated impacts on the environment; to reduce the volume of waste, promoting product reuse or extended use and to reduce the hazardous substances used in the production of materials and products.

The most important policy planning development since 2015 is development of the Latvia’s Bioeconomy Strategy 2030. Latvia is the first among new EU member states introducing such strategy (Ministry of Agriculture of Latvia, 2017). The strategy foresees development of knowledge based bioeconomy and improvements in export and added value indicators of the industry. The strategy has been drafted in cooperation with the Nordic Council of Ministers Office in Riga, which provided exchange on good practice examples from Nordic countries. This again demonstrates the role of external assistance in developing the sector in Latvia. Another important development has been definition of priority science sectors for 2018-2021, which include also energy efficiency, sustainable transport and knowledge based bioeconomy.

The main policy documents and legal documents that discuss eco-innovation and circular economy policy in Latvia are listed below:

- Guidelines for Research, Technology Development and Innovation 2014-2020, which outline targets and strategy for RDI development in Latvia, and the Smart Specialisation Strategy 2014-2020, which elaborates national RDI priority areas. Three out of five RIS3 focus areas are relevant for eco-innovation development: bioeconomy, smart materials and sustainable energy solutions.

- Priority Sectors in Science in 2018-2021. Such topics as energy efficiency, sustainable transport and knowledge based bioeconomy have been defined as priority science sectors for the period 2018-2021.

- Guidelines for Energy Sector Development 2014-2020 and the Latvian energy long-term strategy 2030 – Competitive energy for society, which define the national energy policy scenario for GHG
emission reduction to 2030, ensuring: 1) 50% of renewable energy in the total bruto energy consumption (non-binding target); 2) decrease of energy imports by 50% (imports mainly include fossil energy sources); 3) decrease of average energy consumption for heating by 50%.

- Guidelines for National Industrial Policy 2014-2020, which target the development of national industries and set out action lines for increasing the availability of finance, fostering innovation and exports and developing an entrepreneurial climate.

- Guidelines for Environment Policy 2014-2020 include: 1) reforms for introducing the financing model “Natural resource taxes return to the environment”, which is expected to improve resource efficiency, decrease environmental pollution and foster the adoption of eco-innovative technologies; 2) legislative base for deposit system development for the packaging of drinks (PET bottles, glass, metal); 3) increase of research potential in the area of environment and sustainability.


- Requirements for Green Public Procurement and Rules for Application of Requirements. This regulation describes the main principles of green public procurement, groups of goods and services that should be delivered using green public procurement, requirements and criteria for application.

State Environmental Bureau of Latvia provides information to general public regarding the use of ecolabels. Several ecolabels function in Latvia and provided information helps to make sense regarding the use of these labels.

Overall, Latvia supports the EU Circular Economy Package (European Commission, 2015), however, while Latvia is supportive, practical activities by government towards circular economy are limited. It has to be noted that the Package has promoted greater awareness and increased discussions about the topic of circular economy in Latvia.

Bioeconomy Strategy 2030

The Bioeconomy Strategy 2030 foresees development of knowledge based bioeconomy and improvements in export and added value indicators of the industry. Long-term vision of the strategy is that Latvia’s bioeconomy sectors will be innovation leaders among Baltic States in sustaining and increasing nature capital value and will use it in effective and sustainable manner. The strategy foresees cross-sectoral approach in its implementation. The strategy has been drafted in cooperation with the Nordic Council of Ministers Office in Riga, which provided exchange on good practice examples from Nordic countries. Nordic cooperation has been one of the driving factors behind the strategy. Latvia is first among new EU member states introducing such strategy (Ministry of Agriculture of Latvia, 2017). The strategy was adopted by the Cabinet of Ministers of Latvia at the end of 2017 therefore its impact remains to be seen, however, its adoption demonstrates long-term strategic prioritization of the sector.

Keywords: bioeconomy, sustainability, nature capital

Priority science sectors for 2018-2021

At the end of 2017 Ministry of Education and Science of Latvia defined and Cabinet of Ministers of Latvia approved priority science sectors for the period 2018-2021. This means that future research work and funding in Latvia will be focused in these sectors. Among nine other sectors such sectors as energy efficiency, sustainable transport and knowledge-based bioeconomy are defined as priorities. Development of “green technologies” is defined as one of the sub-priorities. Definition of green technologies and circular economy among other science priority sectors means that flow of funding towards these fields will continue and will create a base for commercialization of “green technologies” and development of eco innovation. It is important to note that society was widely involved in the definition of science priority sectors by organizing open consultation and discussion seminar. This illustrates that the topics of eco innovation and circular economy are topical also in society.

Keywords: energy efficiency, sustainable transport, “green technologies”

Internet link: http://tap.mk.gov.lv/lv/mk/tap/?pid=40438768&mode=mk&date=2017-12-12

Contacts: Lana Franceska-Dreimane, e-mail lana.franceska-dreimane@izm.gov.lv
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Kale, M., 2018, Advisor on sustainability, innovation and research at Nordic Council of Ministers Office in Latvia, E-mail correspondence.

Krese, R., Investment Director at ZGI Capital, 2018, Interview,

## ANNEX: Policy measures addressing circular economy and eco-innovations in Latvia

### Specific measure

Please provide reference to or brief summary of specific measures (national, regional) add cells if necessary

### Focus of policy measure (tick if relevant)

<table>
<thead>
<tr>
<th>Group of policy measures</th>
<th>Type of policy measure</th>
<th>Specific measure</th>
<th>Focus of policy measure</th>
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<tbody>
<tr>
<td>SUPPLY SIDE FOCUS</td>
<td>Equity/business support</td>
<td>Publicly co-funded venture capita funds</td>
<td>Altum is a state-owned financial institution that provides investments in venture capital funds. Its objective is to ensure financial availability for companies, start-ups and large-scale cooperation projects in areas of national significance. - Imprimatur Capital Baltics is a branch of an international investment business company that provides seed capital investments in Latvia in the areas of cleantech, biotech and new materials, among other focus areas. The company works in collaboration with Altum and EU funding mechanisms.</td>
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<tr>
<td>SUPPORT SIDE FOCUS</td>
<td>Public guarantee funds</td>
<td>Altum is a state owned financial institution that provide also financial guarantees, mezzanine loans and export insurance services.</td>
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<tr>
<td>SUPPORT SIDE FOCUS</td>
<td>Collaborative grants</td>
<td>Support to new technology and product development (2014-2020)</td>
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<td>SUPPORT SIDE FOCUS</td>
<td>R&amp;D infrastructure</td>
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<td>Fiscal measures</td>
<td>Support for research infrastructure (2014-2020)</td>
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<tr>
<td>Tax incentives for R&amp;D and start-ups</td>
<td>Tax incentives for R&amp;D</td>
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<td>Tax incentives for R&amp;D personnel</td>
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<td>Education, training and mobility</td>
<td>Tailored training courses for companies, entrepreneurs</td>
<td>Support for training of employees</td>
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<td>Advise/consulting for start ups, companies, entrepreneurs</td>
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<td>Placement schemes for students</td>
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<td>Support for R&amp;D workers recruitments</td>
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<td>Networks and partnerships</td>
<td>Competence centres, clusters, science-technology parks</td>
<td>Competence centre programme (2016-2021), including focus areas: forestry and woodworking, agriculture and food, biomedicine and biotechnologies, smart materials, sustainable and smart energy, modern production technologies</td>
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<td>Cluster programme (2016-2020)</td>
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<td>Technology platforms and innovation networks</td>
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<td>Foresight and common vision building</td>
<td>Development proces and monitoring of the Smart Specialisation Strategy (2014-2020) where defined focus areas include bioeconomy, smart materials, sustainable and smart energy</td>
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<td>Market intelligence and other forms of information sharing</td>
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<tr>
<td>Regulations and standards</td>
<td>Regulations, targets, cap &amp; trade schemes</td>
<td>Energy targets by 2020: - 50% of renewable energy in total bruto energy consumption (40% is the mandatory target) - 50% decrease of energy imports (imports mainly include fossil energy sources) - 50% decrease in average energy consumption for heating</td>
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- energy intensity in GDP creation: decrease to 280 kg of oil for each €1,000 of GDP by 2020 and 150 kg by 2030

Transport targets by 2020:
- minimum of 10% of renewable energy in the transport sector

Waste targets by 2020:
- Share of recycled and reused waste from the total of generated waste: 50% by 2020 and 80% by 2030

Material efficiency targets by 2020:
- Production in financial terms created using one tonne of natural resources: €540 by 2020 and €710 by 2030

GHG emission targets 2020:
- Ratio of the amount of GHG emissions (expressed in terms of CO2) against GDP: 1.13 till 2020 and 1.07 till 2030

### Performance standards, labeling, certification
- Green Holidays: certificate for vacation properties for eco-travel development.
- Green Spoon: label for food quality and its ecological origin.
- Eco School: international label for environmental education at school.
- Blue flag: international label for water and environmental standards at beaches.
- Green key: international ecocertificate in tourism sector.

### Public procurement
- "Green" public procurement of goods and services
- **Regulation - Requirements for Green Public Procurement and Rules for Application of Requirements.**

### R&D procurement
- Pre-commercial procurement

### Technology Transfer
- Advisory support for technology adopters
- Unified Technology Transfer Centre (2016-2020)

### Support of private demand
- Tax incentives for consumers (e.g. for purchasing new technology)
| Environmentally efficient products | VAT reduction on wood pellets for private consumers | | | | | | | | Demand subsidies (e.g. eco-vouchers, consumer subsidies) | | | | | | | | | | | | | |
The Eco-Innovation Observatory (EIO) is the initiative financed by the European Commission’s Directorate-General for the Environment. The Observatory is developing an integrated information source and a series of analyses on eco-innovation trends and markets, targeting business, innovation service providers, policy makers as well as researchers and analysts.

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