Eco-innovation in Bulgaria

EIO Country Profile
2018-2019
Eco-Innovation Observatory

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 and 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.
Eco-Innovation Observatory

Country Profile 2018-2019: Bulgaria

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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 and is not an exhaustive source of information on innovation at the company level.

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Summary

Bulgaria is last in the EU in terms of eco-innovation performance by a large margin. The result of the next three countries – Poland, Romania and Hungary – is almost 50% higher. The result is low despite a number of strategic documents with relevance to the topic and billions of EU funds channelled to SMEs through the Operational Programme (OP) Innovation and Competitiveness and OP Science and Education for Smart Growth. The reasons for this low performance are to be further explored mainly in the less tangible aspects of social capital; availability of support structures and business intermediaries; and the overall structure of the economy.

Bulgaria is also last in the EU in terms of digital performance and digital competitiveness. Despite the positive developments in connectivity and digital public services Bulgaria cannot reap the benefits of the digital transformation.

Only some elements of the circular economy have been integrated in the Bulgarian strategic and policy landscape. The potential of new circular business models has not been explored yet despite certain successes with some waste stream such as plastic packaging and waste electrical and electronic equipment (WEEE). A lot of progress is yet to be made in terms of more efficient water use and water reuse. Green Public Procurement is not playing the role it should in terms of triggering the offer of green products and services.

Despite the relatively high number of companies certified with environmental management systems this has not led to significant uptake in terms of green product offer and eco-innovation. Nevertheless, it has to be mentioned that there are promising new start-ups in the area of the collaborative economy and the bioeconomy, for example.

Bulgaria has the potential to move from a modest to a moderate only if it manages to fill in structural gaps in the eco-innovation system starting from the inputs but also working on different related systems such as science and innovation; support to SMEs and the energy system. The policy landscape is extremely important and besides formally including eco-innovation and circular economy in strategic documents it needs to enforce radical measures for improving environmental performance and triggering eco-innovations.
Introduction

The results of the Eco-IS and the consistent low performance of Bulgaria demonstrate the fact that there are systemic problems to implementing eco-innovations. These are not necessarily related to the available funding (which is not negligible due to EU funds) but are also linked to the structure of the economy and the time needed to implement the transition to a more resource efficient and circular economy. These are not related to the legal framework either which is similar to other EU countries. All national strategies recognise the issues in one way or another but to no avail.

The predominant mindset is such that expenses on the environment as a whole or the green credentials of products (imposed by legislation) are perceived as costs. It takes a long time, targeted efforts and a lot of interventions to change this.

The unsatisfactory results of the Eco-IS are also due to the fact that there are different systems which are behind the national eco-innovation performance: the research and innovation system; the economic system and the energy system. All of these are governed by different ministries whose goals are not necessarily aligned in practice. Additionally, while it is possible to adopt measures and impact some of the indicators in the short-term, the impacts of measures on other indicators would only become visible in the mid- or long term if at all.

Bulgarian SMEs have not fully embarked on the transition to the circular economy. Waste management within SMEs has a huge margin for improvement and new circular business models (e.g. industrial symbiosis, sharing economy, etc.) and actions high on the waste hierarchy are scarce. Energy and resource efficiency of companies could be hugely improved as well. While efforts on environmental management certification could continue it is obvious that these are not sufficient and do not automatically lead to eco-innovations. Green Public Procurement and Innovation procurement are not used sufficiently.

Despite the relatively gloomy picture, from the good practices presented later in the report it becomes obvious that there are new start-ups which understand the issues at stake and embark on different, more eco-innovative and circular business trajectories.
1 | Eco-innovation performance

The analysis in this section is based on the EU 28 Eco-innovation Index (EcoI Index) for the year 2019. The Eco-innovation index demonstrates the eco-innovation performance of a country compared with the EU average and with the EU top performers. EcoI 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 1 EU28 Eco-innovation Index 2019, composite index](chart)

Source: EIO, 2019

According to the latest 2019 Eco-Innovation Scoreboard (Eco-IS) results, Bulgaria continues to be ranked last of the EU Members States, and remains a “modest innovator” despite its willingness to reach the “moderate innovator” group as is planned in its strategic vision up to 2020. Despite the efforts made in recent years by the Bulgarian government to improve the legislative framework and to promote innovation, eco-innovation and circular economy, Bulgaria still lags behind in these areas.

The analysis of the composite Eco-innovation index shows that Bulgaria scores low on component one (Eco-innovation inputs) which could be partly explained with the relatively low GDP of the country and disbalances within the research system. The country has relatively higher performance for two of the indicators. For ‘Eco-innovation activities’ Bulgaria scores 65 and comes 22nd in the EU. For ‘Eco-innovation outputs’ Bulgaria scores 19 (five times lower than the EU average) and has the penultimate place in the EU, only before Hungary. The results are far from being balanced. A specific example would be the “ISO 14001 registered organisations (per mln pop)” indicator, is a strength within the EI Activities with a value more than twice as high as the EU average. Unfortunately, this result is offset by the low performance under important related indicators ‘Implementation of resource efficiency actions among SMEs’ (30) and ‘Implementation of sustainable products among SMEs’ (14) within the same component. This speaks of low innovation and green product development activities within enterprises despite the availability of formal certifications and means that
environmental management system certifications do not automatically lead to innovation activities.

Figure 2 Five components of the Eco-innovation index for Bulgaria, 2019

Source: EIO, 2019
• Eco-innovation inputs

This category takes into account the share of the government’s environmental and energy R&D appropriations and outlays, R&D personnel and researchers, and the value of green early-stage investments in the country. Bulgaria is 24th in the EU before Cyprus, Romania and Malta. It is last in terms of R&D spending, a situation that reflects the funds channelled from the budget to R&D. It has to be kept in mind thought that more than a billion EUR have been directed to R&D from EU funds. The number of total R&D staff and researchers is also among the last in Europe given that only a few of the high number of universities do research and the researchers are only concentrated in the Bulgarian Academy of Sciences. Bulgaria fares relatively well in terms of early stage green investments which might be due to EU funds. Significant funds have been invested in the centres of excellence and centres of competences. As pointed out by the Bulgarian Ministry of Environment and Waters (BMEW), one of the main reasons of the poor performance of the country is the lack of sufficient information campaigns to promote technologies and products connected with eco-innovation and their benefits.

• Eco-innovation activities

This category includes the implementation of resource-efficiency actions and sustainable products among SMEs, and the number of ISO 14001 certificates in the country. Bulgaria holds the 23rd place under this component mainly due to the relatively good number of ISO 14001-registered organisations. However, this has not materialised into more resource efficiency actions and more sustainable products among SMEs where Bulgaria is among the last in the EU.

• Eco-innovation output

This category takes into account the eco-innovation-related patents, academic publications and media coverage in the country. Bulgaria holds the penultimate place only before Hungary.
under this component with very low results under the first two indicators. These naturally mirror the poor results under the Eco-innovation Input component.

- **Resource-efficiency outcomes**

  This category includes the material, water and energy productivity in the country, as well as the GHG emissions intensity. Bulgaria is ranked second to last among the EU 28 with a score of 4, just before Estonia (2). “Material productivity”, “Water productivity”, “Energy productivity” and “GHG emissions intensity” have respectively the score of 1, 0, 5 and 0. For all indicators except “Energy productivity” Bulgaria holds the last place far behind the leaders in each group. For “Energy productivity” only Estonia and Finland are behind Bulgaria. This performance is due to structural issues with the Bulgarian economy, the remaining electricity generation from coal and the few resource efficiency actions. Energy efficiency actions have become relatively mainstream but obviously this is not sufficient to shift the place of Bulgaria in the EU under this component.

- **Socio-economic outcomes**

  This category takes into account the eco-industries exports and employment, and the value added in environmental protection and resource management activities in the country. Bulgaria is almost twice as low as the EU average with the score of 56, which places the country on the 21st position out of 28 countries. Within this component, the indicator ‘Value added in environmental protection and resource management activities’ (as % of GDP) holds the highest value of 51 compared to the other two indicators in this group: “Exports of products from eco-industries” (% of total exports) with a score of 12; “Employment in eco-industries” (% of total workforce) with a score of 11. It has to be noted that in 2015 Bulgaria was close to the EU average but due to the replacement of two indicators in this component the result has gone down.
2 | Selected circular economy and eco-innovation areas and new trends

Waste management and the circular economy

According to the EU Early Warning Report, Bulgaria is considered at risk of missing the 2020 target of 50% preparation for re-use/recycling of municipal waste. Bulgaria will need to undertake measures to boost waste recycling rates for households and SMEs. The separate collection of recyclables, including bio-waste, is not yet being carried out effectively. In order to respond to the strengthened EU circular economy agenda Bulgaria needs to invest more in projects higher in the waste hierarchy (e.g. reuse and repair) beyond recycling and treatment of residual waste. In order to do so, companies and organisations need to adopt eco-innovative solutions.

The 2019 European Semester Country Report Bulgaria reiterates that ‘the potential of new circular economy business models is not being exploited’ and waste management continues to be a challenge, despite municipal waste generation being below the EU average. The secondary use of material in Bulgaria was 4.3% in 2016, substantially below the EU average of 11.7%.

At the same time, targets for the recovery and recycling of six groups of waste, among which waste electrical and electronic equipment (WEEE) have been successfully implemented throughout Bulgaria by a scheme based on Extended Producer Responsibility (EPR). This development contributed to the achievement of a recycling rate for e-waste which is significantly higher than the EU average. Two of the good practices presented later in the text (Ecopack and Ecologica) address this issue.

Water supply and treatment

Connection and treatment rates for urban wastewater are relatively low. Only about 26% of Bulgaria’s wastewater is collected; 20.4% is subjected to secondary treatment and 6.7% undergoes more stringent treatment (EC, 2017b). While wastewater collection and treatment is in the municipal remit Bulgarian SMEs could be encouraged to explore eco-innovative solutions in water reuse and innovative water treatment methods on the premises. One of the good practices presented later in the text (Qubico) addresses the issue of water savings through digital technologies.

In the 2014-2020 period the Fund of Funds managed a EUR 230 million Financial Instrument (FI) for the Development of the Water Sector within the OP Environment. The FI is designed to support investment in the water and wastewater sector and serve for the purpose of long-term lending to Water and Wastewater Operators (WWOs), as well as loan guarantees for commercial banks, to finance eligible WWO projects¹. In the 2014-2020 period OP Environment provided significant resource for water and waste projects.

Sustainable transport

To meet energy efficiency goals, Bulgaria needs to keep improving the sustainability of the transport sector, which accounts for a large part of GHG emissions in the country together with heating and industry. To this end, the OP Transport and Infrastructure 2014-2020 has been the biggest source of financing. It provides funds to develop road infrastructure and

accessibility. In addition, significant investments have been made notably in rolling stock – such as new and more environmentally-friendly buses (mostly compressed natural gas (CNG)), trolley buses and trams.

Figure 1 Traffic Centre Burgas

Source: https://www.instagram.com/p/BvTYiXBjg1J/

In 2017, the National Trust EcoFund provided financial support for a total of 27 projects that delivered 39 electric vehicles under the Climate Investment Programme. Delivery procedures based on the green criteria were carried out by 20 Bulgarian municipalities and seven state institutions. While in 2017 there were 1300 electrical and hybrid cars sold in Bulgaria in 2018 the growth was more than 50% and some 2100 cars were sold. As of 2019, in Bulgaria there were about 2000 hybrid cars and 800 fully electrical cars. As of April 2020, there are 151 charging stations in Bulgaria. An Electric Vehicle Industrial Cluster (EVIC) is operating in Bulgaria with 73 members as of April 2020.

With regards to transport and digitalisation the BULRIS system is used for managing vessel traffic on the Danube River. The Centre for Urban Mobility, Sofia has developed an application for planning transport routes in the city. Around 15% of the rails in Bulgaria are equipped with the ERTMS system.

Clean technologies

Cleantech is one of the priority sectors of the Bulgarian Innovation Strategy for Smart Specialisation (ISSS). Throughout the years of its activity, Cleantech Bulgaria - a business network focused on clean technologies, innovation and sustainable development – has been running a number of green entrepreneurial programmes. Cleantech Bulgaria operates an array of entrepreneurial formats and pre-incubation and acceleration programmes in partnership with Climate-KIC and InnoEnergy. It is running three green entrepreneurial programmes (Danube Energy+ Tool, Power Up! 2020 and EIT Climate-KIC Accelerator). EIT Climate-KIC Accelerator is the only EU pre-seed acceleration programme for start-up enterprises with a sustainable business model. PowerUP! by EIT InnoEnergy 2020 is a competition for start-up enterprises in Central and Eastern Europe in the fields of energy, smart technologies and mobility. Danube Energy+ Tool is a training programme for young

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2 Interreg Europe Policy Learning Platform Good Practice
4 idem
5 https://eldrive.eu/publichn-mreja-zariadni-stancii-elektromobili/
6 http://www.emic-bg.org/
7 Koralova-Nozhara Petya, 2019, Digitalisation and Transport Sector in Bulgaria
people with innovative ideas in the energy sector. It has influenced the development of the local innovation eco-system by providing: education campaigns to employees on green office practices; dedicated guidance for sustainable business for C-Level professionals, entrepreneurs and students; supporting emerging technologies in the pipeline for market launch and scale up; developing business clusters that focus on clean technologies.

In terms of cleantech financing the **Bulgarian Fund of Funds** is running a 58.7 million BGN (30.1 MEUR) **Technology Transfer Fund** to be aligned with the goals of the national ISSS including clean technologies. The Fund of Funds is also managing an **Urban Development Fund** partly targeted at SMEs. The fund will provide support for projects that improve the urban environment, promote economic growth in the regions and contribute to increasing energy efficiency. The Fund of Funds is running a Financial Instrument on Guarantees under OPIC providing assistance to enterprises improving their energy efficiency.

Support for innovation (including eco-innovation) is provided by the **National Innovation Fund** under the Ministry of Economy. It funds R&D projects initiated in companies, namely technological development; improvement of production processes, etc. In recent years, approved projects included: innovative technologies for environmentally sound treatment of hazardous waste; recovery of waste rubber products; production of heat by waste pyrolysis; analysis of exhaust emissions; conversion of conventional electric vehicles; etc. The implemented projects include eco-innovation in the field of RES; fuel systems for vehicles, etc.

**Energy efficiency and renewable energy**

The 2020 European Semester Country Report Bulgaria underlines that investment needs in the fields of energy and climate are significant. Frequent amendments of the Energy Act are not conducive to creating a stable and predictable investment climate. Bulgaria remains the most energy-intensive economy in the EU by a wide margin. While the structure of Bulgaria's final energy consumption (FEC) is quite similar to that of the EU, in 2018 energy consumption per unit of GDP (414.36 kgoe/1000 EUR) was more than 3.5 times the EU-28 average of 117.76 kgoe/1000 EUR (Eurostat). This inefficient use of energy is hampering the competitiveness of SMEs and the economy as a whole.

Bulgaria is lagging behind in its progress towards its 2020 indicative national target for energy efficiency. In 2018, Bulgaria was off the mark by approximately 8% in terms of primary energy consumption and by 11% in terms of final energy consumption, with both gaps increasing compared to 2016 levels. Targeted measures and investment can unlock the huge energy-saving potential in the industrial, transport and residential sectors. The 2019-2020 PwC SMEs survey reiterates these findings as only 33.4% of the surveyed SMEs have an energy efficiency policy.

Though on track to achieve its 2020 renewable energy target, Bulgaria remains the most GHG emission-intensive economy in the EU. In 2016, the GHG intensity of Bulgaria’s economy was 4.3 times higher than the EU average (EC 2017c). Bulgaria exceeded its 2017 indicative trajectory target as set under the Renewable Energy Directive. The 2018 level of the Resource Efficiency (RE) share in Gross Final Energy Consumption (GFEC) stood at 21%, well above the 16% target. The share of energy from renewable sources in the transport sector has increased considerably in recent years and reached 7.2% in 2017 but it is still below the 2020 target of 10%. At the same time, based on its own projections, Bulgaria may miss by 1 pp. its 2030 target of keeping its GHG emissions at no higher than the 2005 level (EC, 2018c). The 2019-2020 PwC survey demonstrates that only 6.5% of the surveyed SMEs use green energy in their production processes.

To meet the demand for energy efficiency, the **Energy Efficiency and Renewable Sources Fund** provides loans to Bulgarian companies, municipalities and private individuals. In
addition, the **Bulgarian Development Bank** also offers a leasing line (an on-lending programme) for the purchasing of machinery and equipment for SMEs.

**Green products and services and environmental management**

The proportion of SMEs that have benefited from public support measures for their production of green products increased by 9% over 2014-2018. Nevertheless, the proportion of SMEs that offer green products or services is among the lowest in the EU.\(^8\) As of March 2020, there are only nine products in Bulgaria with the EU ecolabel. For comparison, Slovenia has 72 products. Outside of the official product certification, within a survey among SMEs for the purpose of the preparation of the BG SME Strategy, only 9.5% of the respondents stated that their SMEs offer green products. According to the survey, 9.0% of the contacted SMEs answered that they plan to launch green products on the market. At the same time, there are Bulgarian start-ups which start producing bio-based products serving as substitutes of the fossil-based ones.

The number of EMAS-licensed organisations in a country can give a rough measurement of the circular economy transition. This indicator shows to what extent this transition is engaging the private sector and other national stakeholders. Bulgaria has 13 organisations on 27 sites registered under EMAS as of October 2019.\(^9\)

**Digitalisation/IT technologies in eco-, circular, sustainable innovations**

According to the Digital Economy and Society Index (DESI), in 2019 Bulgaria was last in the EU with regards to digital performance and digital competitiveness. There was a slight increase of DESI score for Bulgaria over the period 2017-2020, yet its values are far below EU 28 average, and the country ranking has not been improving\(^10\).

Table 1 DESI data on Bulgaria and EU 28 (2017 – 2019)

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<tr>
<th></th>
<th>Bulgaria</th>
<th>EU 28</th>
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<tbody>
<tr>
<td>Rank</td>
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<tr>
<td>DESI 2017</td>
<td>27</td>
<td>46.9</td>
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<tr>
<td>DESI 2018</td>
<td>26</td>
<td>49.8</td>
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<tr>
<td>DESI 2019</td>
<td>28</td>
<td>52.5</td>
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</table>

Source: EC, Digital Scoreboard

Bulgaria scores the lowest in the EU in connectivity and integration of digital technologies and takes the penultimate place in internet usage. At the same time, the EC digital scoreboard indicates positive developments in connectivity and digital public services for the period 2014–2019. Development potential is considerable especially at regional and local level. A considerable slowdown has been observed in the internet usage and human capital. The share of the population with basic computer skills is 29% compared to an average of 57% in the EU-28. The biggest gap is in the integration of digital technology with no or little progress observed in recent years. As a result, companies do not fully benefit from online trade opportunities (6% in Bulgaria compared to 17% in the EU). It could also be inferred that this is

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\(^10\) National Programme Digital Bulgaria 2025
an obstacle to adoption of eco-innovations linked to digital technologies. Despite these negative trends, during the Covid-19 crisis online teaching has fared relatively well in the country.

Recent data from the EIB Investment Survey 2019 indicates that the Bulgarian enterprises are relatively well developed in the field of Internet-of-Things (IoT), but are lagging behind in automation, advanced robotics, cognitive technologies and augmented or virtual reality. Most SMEs (85%) reported that availability of skilled staff has been a long-term barrier for their development.

SBA Factsheet 2019 reports that the share of Bulgarian SMEs with ICT experts was 18.7%, while that of SMEs providing ICT training to employees was rather lower – 8.0%.

**Conclusion**

The relatively weak performance of different sectors of the economy with regards to energy and material efficiency strengthens even further the case for a more radical uptake of eco-innovation on a company and sectoral level. EU funding is an important factor for that uptake, and it should be used to also catalyse a cultural shift within companies and the government. Companies need to start perceiving investing in eco-innovation as a priority and as an opportunity to improve their financial performance and position them differently on the market. The necessity to rely more on eco-innovation will come both from regulatory constraints (in line with the Green Deal ambitions) and through market and resource pressures.

**Box 1 Ecologica: recycling of WEEE**

![Ecologica](Source: www.ecologica.bg)

**Ecologica**

The company recycles electrical and electronic equipment. It serves households, small and large administrations and manufacturing companies across the country. Ecologica develops innovative "Old for New" programs for significant sales growth. The company supports its clients to comply with the EU WEEE Directive.

**Keywords:** electric and electronic waste, recycling

**Link:** ecologica.bg
Box 2 Qubico: monitoring of water and sewer networks for saving water

Qubico, monitoring of water and sewer networks for saving water

Qubiqo is a Bulgaria-based engineering company that provides comprehensive solutions for monitoring of water and sewer networks. The simple philosophy of the company is that the higher the number of monitoring points the better the understanding of network operators. To achieve this Qubiqo has developed QDATA – a data-capture, visualization and analytics platform that is typically facilitated by deploying its own data loggers. Equally important, QDATA seamlessly integrates data from water meters, pressure and level sensors and other devices that water utilities inevitably already have on the ground.

In essence, Qubiqo provides a bridge between physical and digital infrastructure to facilitate utilities’ understanding of network performance. Market-wise, the company is focused on Eastern Europe with numerous projects and utility partnerships in Bulgaria, North Macedonia, Kosovo and other countries.

Qubiqo’s toolbox is a prerequisite for efficient network operations, Non-Revenue Water reduction but also investment planning and improved customer service.

Keywords: water networks, monitoring, data

Link: https://qubiqo.com/en/q-scada-analytics/

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Box 3 Biomyc: Bio-based sustainable packaging

Biomyc: Bio-based sustainable packaging

Biomyc (created in 2017) revolutionizes the packaging industry by developing innovative packaging solutions from sustainable feedstocks.

By combining cutting edge technologies, eco design and production management they ensure a unique packaging solution with a perfect product-market fit that is safe for the environment.

All products are created from sustainable feedstocks. Fully biodegradable materials provide thermal insulation and impact protection to products. The mission of the company is to bring sustainable innovation to market and enable circular business models.

Types of packaging:
- Mushroom material packaging;
- Paper pulp packaging;
- Natural wood packaging;

**Keywords:** Packaging; Biomaterials; Circular economy

**Link:** biomyc.eu

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**Box 4 LAM-ON: biodegradable laminating film for print and packaging**

LAM-ON is a Bulgarian start-up producing a 100% biodegradable laminating film for print and packaging. It is derived from renewable resources like corn. The glue layer developed specifically for the needs of the industry is completely toxic-free. It is also water soluble in order to ease the recycling process. LAM'ON offers the same results, is used on the same machines, and is offered at the same price range as the currently used laminating films.

**Keywords:** biodegradable, toxic-free, bio-plastic, compostable

**Link:** [http://lam-on.com/](http://lam-on.com/)

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Source: LAM-ON
3 Barriers and drivers to circular economy and eco-innovation in Bulgaria

3.1 Barriers to eco-innovation

The persistent low performance of Bulgaria in eco-innovation could not be blamed entirely on economic factors. Indeed, these are very important as far as the EI input component is concerned. However, these could hardly be responsible for performance under the other components. The availability of significant EU funds for innovation, competitiveness and the environment is a proof that funding is not the only culprit. Indeed, the availability of demand on the internal market is a more important factor for the low eco-innovation activities. Additionally, as the levels of electricity prices in Bulgaria are the lowest in Europe there are obviously not sufficient incentives for the companies to act. What is more, eco-innovation interventions are still not fully recognised as viable business models by the financial institutions outside of the EU Funds and the different specialised lending facilities. While the awareness already exists among different actors with regards to energy efficiency and renewable energy this is not the case yet as far as less conventional circular business models are concerned.

The technological factors certainly play a role concerning eco-innovation. It has to be noted that through Operational Programme (OP) Innovation and Competitiveness many SMEs have renewed their technological basis with newer more efficient and performant infrastructure. Indeed, all things being equal a new SME would not launch its activity with the most efficient equipment. What is more important for the lack of sufficient actions on company level is that lack of technical support and readily available technical solutions. There is a huge margin for improvement with regards to the familiarity of SMEs with the Best Available Techniques (BATs) and especially the Best Environmental Management Practices (BEMPs).

A recent survey among 500 SMEs can lead us to the assumptions that the human factor is probably the most important barrier to eco-innovation uptake in Bulgaria. This has several dimensions: firstly, companies lack informed and competent personnel to deal with non-core activities. Secondly, as confirmed in discussions with experts from the Ministry of Economy there is a lack of a sufficient number of resource efficiency auditors and consultants who could provide the support missing in-house. This is a support function that needs to be developed in coming years. It has to be noted that the business intermediaries have not been providing the necessary support to a sufficient extent. One of the most important possible improvements in Bulgaria is the integration of innovation and environment in the educational system.

The social barriers are also of importance. Although the situation has been slowly changing there is little consumer pressure on the producers and service providers to green their products and services. Indeed, positive new trends appear in the big cities but, as a whole, the Bulgarian consumer remains price sensitive.

The regulatory and policy framework is not very different from those in other EU countries and yet – the results are different. There is a big number of strategies, roadmaps and action plans which have successfully incorporated a language associated with innovations, energy and resource efficiency. Unfortunately, this has not led to convincing action on behalf of the government or other actors in the eco-innovation chain. Good examples exist but they are an exception rather than a rule.
3.2 Drivers to eco-innovation

New business opportunities and profits have been the main drivers of the few prominent eco-innovations in Bulgaria. Young, knowledgeable entrepreneurs have identified promising niches (such as collaborative economy or the substitution of fossil-based with bio-based products). Certainly, the investments which have been made in companies through the European Structural and Investment Funds (ESIF) have played a role mainly contributing to the replacement of old technology with new one as well as improving the energy efficiency of buildings. Private financial institutions and funds have also played an important role in this respect.

The launch of Centres of Competence and Centres of Excellence is extremely important as a number of those (see section on policy instruments) focus on eco-innovation aspects. Making those work would be very beneficial for the country and they could potentially become important drivers for eco-innovation. Unfortunately, the websites of the centres do not feature promising results for the time being. There is an ongoing evaluation of the centres which will hopefully come up with judgement on their effectiveness.

The fact that a number of strategic documents in Bulgaria have already integrated circular economy is a driver and an important factor especially because future funding streams are usually related to these strategic priorities. The significant EU funds which will be channelled to the implementation of the Green Deal after 2021 also have the potential to drive eco-innovations and the circular economy but need to be used extremely wisely and to fill in precisely the gaps in terms of human skills for eco-innovation and the circular economy; improve the capacities and the positioning of business intermediaries as well as the eco-innovation and circular knowledge offer to industry. Each SME (or a bigger industry) which would like to green its operation needs to have access to financial support; consulting support; sectoral toolkits and capacity building opportunities.
4 | Policy landscape in Bulgaria

4.1 Strategic policy framework

Government Programme 2017-2021

The programme of the current Bulgarian government includes the objective of ‘achieving resource efficiency by applying the waste management hierarchy, waste prevention, promotion of reuse and recovery by recycling to reduce disposal and adverse impacts on the environment and human health’. The following measures are also included: further development of the waste pre-treatment infrastructure for recovery in 17 regions; completing systems for separate collection of biowaste; completion of composting and anaerobic digestion facilities to ensure a high level of environmental protection and the use of environmentally safe materials produced from biowaste; developing a National Strategy in relation to the EU Circular Economy Package.

National Development Programme: Bulgaria 2020

Enhancing the competitiveness of the economy by ensuring a favourable business environment, promotion of investments, application of innovative solutions and improving resource efficiency is one of the goals of the programme.

Europe 2020: National Reform Programme

The programme includes measures for the introduction of appropriate incentives and mechanisms for effective water use; and promoting investment in modern facilities for waste recovery through recycling, reuse and/or extraction of secondary raw materials and energy.

National Strategy for the Promotion of SMEs – 2014-2020 (Small Business Act)

The Strategy committed to ‘enable SMEs to turn environmental challenges into opportunities’. The government has also committed to ‘providing more information, expertise and financial incentives in order to fully exploit the opportunities for new “green” markets and increased energy efficiency, partly through the introduction of SME management systems environment’.

National strategy for development of scientific research in Bulgaria 2017 – 2030: Better Science for a Better Bulgaria

In October 2016, Bulgaria adopted the strategy ‘Better Science for a Better Bulgaria – Vision for a research policy strategy in support of society and economy’. The following priority research areas are of relevance to eco-innovation: mechatronics, clean technology and new energy and energy efficient technologies; health and quality of life, green and eco-technologies, biotechnologies, eco-foods, purification and waste technologies; environmental protection; utilisation of raw materials and bio-resources; environmental monitoring; materials and nanotechnology; and ICT.

National Digital Bulgaria 2025: programme and roadmap

The programme builds upon the Digital Bulgaria 2015 and aims to introduce digital solutions in different sectors of the economy: for citizens and businesses. It addresses issues such as building the common digital market; improvement of compatibility and standards; enhancing security; improving access to broadband internet; stimulating computer literacy; etc. The Ministry of Transport, ICT and Communication coordinates the implementation of the

In addition to the programme, Bulgaria has adopted a Digital Roadmap 2025. The roadmap comprises of five priorities: better access to digital networks and services; development of dynamic and innovative digital economy; improvement of digital competencies and skills; quality electronic services to business, citizens and e-government; cyber security.

Integrated Transport Strategy for the period until 2030 (2017) and the Strategy For The Development of The Transport System Of The Republic Of Bulgaria Until 2020

Both strategies include strategic objectives on limiting the negative effects of the transport sector development. They include eco-innovation related priorities such as ‘reduction of the consumption of fuel and increasing the energy efficiency of transport’.

National Energy and Climate Plan (2021-2030)

Adopted in February 2020 the Plan spells out a number of energy sector priorities including the increase of the energy efficiency through new technologies; and renewable energy development and use.

National Climate Change Adaptation Plan until 2030

The plan is relevant to eco-innovation as it describes the impacts on different sectors of the economy and efforts that need to be made to adapt to climate change. Relevant sectors include energy, forests, transport, tourism, urban environment, health and waters. The process of adaptation would require significant innovation capacity. Main goals of the strategy include integration of adaptation to climate change; capacity building of institutions; awareness raising; and building resilience to climate change.

National Air Pollution Control Programme (2020-2030)

It was adopted in 2019 in line with Directive EC/2016/2284. Among others, the programme foresees air quality improvement measures.

Innovation Strategy for Smart Specialisation (ISSS), 2014 – 2020

Goal 2 of the Innovation Strategy for Smart Specialisation of the Republic of Bulgaria 2014-2020\(^\text{11}\) is “support for accelerated uptake of technologies, methods, etc., for improvement of the resource efficiency and the application of ICT in enterprises”. Priority activities include the promotion of innovation for resource efficiency in the water sector (reuse and recycling of water, water and waste water treatment, including resource recovery; and intelligent monitoring systems) and in waste sector (waste prevention, collection, recycling and recovery; introduction of high-tech information and communication systems for reporting quantities of waste collected). Cleantech is one of the priority areas in the strategy. ‘Innovation for resource efficiency’ is a horizontal topic of the Strategy. The Strategy also includes the objective for Bulgaria to move from the group of “modest innovators” to the “moderate innovators” group by 2020.

The 4th National Waste Management Plan (2014-2020) covers the transition from waste management to the efficient use of waste as a resource, and to sustainable development by preventing waste as far as possible. The Plan supports the central and local authorities to concentrate resources from national and European funding sources on priority projects in the

\(^\text{11}\) http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=948
field of waste management. The plan includes annual objectives for recycling and recovery of packaging waste as well as the introduction of a system for separate collection of packaging waste covering not less than 6 million inhabitants and including resort towns and all cities with a population over 5,000 inhabitants.

The National Strategy for Management of Construction and Demolition Waste for the period 2011–2020

The Plan includes measures for increasing the recycled and recovered quantities of CDW. The main target is to recycle 70% of CDW by 2020. Installations for recycling construction materials are a part of the integrated regional municipal systems for waste management.


The Plan is the main strategic document for renewable energy for the period. It includes measures for utilising the energy potential of biomass and principles associated with it such as cascading the use of biomass; and resource efficiency and circular economy in the energy utilisation of biomass.

4.2 Policy instruments, measures, programmes

Operational Programme for Innovations and Competitiveness (OPIC), 2014-2020

Interventions under OPIC 2014-2020 (with a total available budget of EUR 1.27 billion) have focused on increasing the resource efficiency of SMEs in manufacturing industry. It supports the implementation of high-tech solutions to optimise production processes and reduce the use of raw materials; introducing modern technologies to use waste as a raw material in new production and/or other alternative uses; introduction of non-waste producing technologies, innovative manufacturing materials, technologies for the production of “green products” in all other sectors of the economy.

Operational Programme “Small and medium sized enterprises initiative” 2014-2020 (OP SMEI)

It is developed in accordance with the implementation of the SME Initiative in Europe. The budget is MEUR 102 coming from OPIC. It is targeted at Financial Instruments for SMEs.

Operational Programme for Regions in Growth, 2014-2020

The OP Regions in Growth focuses on urban policy such as developing energy efficiency in peripheral areas. Approximately 22% of the funds under the OP would be allocated to measures for energy efficiency in public and residential buildings; 9% of the funds are be invested in the development of an integrated urban transport system.

Operational Programme for the Environment, 2014-2020

OP Environment is directly related to the implementation of the “Europe 2020” Strategy of the EU by promoting sustainable growth and effective use of resources. It supports state-of-the-art waste management; support to businesses to implement circular economy principles and investing in waste-recycling technologies, adding value to businesses. In addition, the OP promotes waste recycling at the expense of landfilling, the construction of pre-treatment and composting facilities continues.12.

Operational Programme for Science and Education for Smart Growth, 2014-2020

OP Science and Education for Smart Growth (OP SESG) is managed by the Ministry of Education and Science (MES) with a total budget of BGN 1.37 billion. **Four Centres of Excellence** have been funded: Universities for Science and IT in the e-society; Informatics and ICT; Cultural Heritage BG; and Mechatronics and clean technologies. The last one is relevant in the area of eco-innovation.

An additional **nine Centres of Competence** have been launched. The ones relevant for eco-innovation are:

- Clean technologies for a sustainable environment - water, waste, energy for a circular economy (Clean & Circle);
- Intelligent mechatronic, eco- and energy-saving systems and technologies (SMEEST);
- HITMOBIL - Technologies and systems for generation, storage and consumption of clean energy;
- Sustainable utilization of bio-resources and waste from medicinal and aromatic plants for innovative bioactive products;
- Digitization of the economy in a Big Data environment

**Energy Efficiency and Renewable Sources Fund (FEEVI)**

FEEVI is a revolving fund based on a public-private partnership, which aims to help identify, develop and finance feasible energy efficiency improvement projects that reduce GHG emissions. Initially, the Fund was capitalised by the Global Environmental Facility (GEF), the World Bank and the Austrian Government. The Fund provides loans or loan guarantees to Bulgarian companies, municipalities and private entities in the implementation of energy efficiency investment projects.

**Financial mechanism of the European Economic Area (EEAFM) 2014-2021**

In the framework of the European Economic Area Financial Mechanism, EUR 115 million have been allocated by the donor countries since 2016 to finance projects for local development and poverty reduction, energy efficiency and security, environmental protection and the development of entrepreneurship in the field of culture. Around MEUR 33 in financial aid is provided (including EUR 28 million grant from the EEAFM) for projects in areas such as energy efficiency improvement in production; RES development; energy recovery from waste in industrial processes, etc. The aim is to reduce and/or eliminate GHG emissions by implementing energy efficiency measures at a reasonable cost - the planned grant aid is not more than EUR 150 per t CO2 eq./year of reduced/eliminated GHG emissions (Ministry Energy of Bulgaria, 2017).

**National contest “Innovative Enterprise of the Year”**

The national contest “Innovative Enterprise of the Year” is organised by Applied Research and Communications Fund, ARC Consulting, Enterprise Europe Network – Bulgaria and EC Representation in Bulgaria. “Green Innovative start-up” is one of the categories. The winners in the past several years are:
• 2019 - International Power Supply AD created an autonomous hybrid power supply system for the management of electricity produced from renewable sources.
• 2018 – Biomyic Ltd (presented as a good practice)
• 2016 – Tangra – Av Ltd - produce and develop their own original energy-saving ventilation systems, which recuperate up to 94% of the energy.

Green Public Procurement

The website of the Bulgarian Ministry of Environment and Waters includes information on the criteria for the 19 product groups developed by the European Commission. In addition, there is the GPP Guidelines (last edition from 2016) and Guidelines for applying energy efficiency and energy saving criteria in tenders. In addition, the Public Procurement Agency website contains a report on GPP potential in Bulgaria from 2018.

GPP have been mentioned as a tool in several strategic documents: National Development Programme: BG 2020 (GPP as an incentive for green product demand); National Waste Management Plan (2014-2020); Third National Action Plan on Climate Change (2013-2020); Energy Strategy till 2020 (energy efficiency criteria in public procurement); Innovation Strategy for Smart Specialisation (procurement as a trigger for innovation).

Air quality

The Bulgarian Presidency of the Council of the EU in the first half of 2018 organised the 21st Forum on Eco-innovation for Air Quality on 5-6 February 2018 in Sofia. The participants from companies, municipalities, and public and private sector initiatives discussed developing and deploying effective new technologies; innovative business and governance models, for the reduction of air pollution originating from energy use.

Good practices

Box 5 Measures to boost the recycling market in Bulgarian legislation through integrating construction and demolition recycled materials in construction

The Ordinance on construction waste management and use of construction and demolition recycled materials published in 2017 in Bulgaria provides support measures for recycled materials from construction and demolition and their incorporation into new construction. The Ordinance stipulates that the contracting authorities of public works projects financed by public funds are responsible for achieving targets for integrating CD recycled materials in construction as follows: min. 2 % for new construction of buildings and facilities; at least 10 % for new construction of roads; -at least 3 % for rehabilitation of roads; min. 8 % for new construction, reconstruction of other technical infrastructure; min. 10 % for new construction of landscaped areas for public or special purpose, incl. networks and technical infrastructure facilities for their maintenance, amusement sites, outdoor sites for sports and cultural activities; min. 12 % for recycling of CDW in backfills.

13 https://ips-group.net/
14 http://www.aop.bg/fckeditor/user/File/bg/practika/Energiina_efektivnost.pdf
15 https://www2.aop.bg/politiki-i-strategicheski-dokumenti/%d0%b5%d0%b3%d0%bb%d0%b8%d1%82%d0%b8%d0%ba%d0%b8-%d0%bd%d0%b0-%d0%b5%d1%81/zeleni-obshtestveni-porychki
16 http://ec.europa.eu/environment/ecoinnovation2018/1st_forum
The good practice is a very good example how the adoption of a policy instrument can stimulate the market for recycled CDW. Thanks to this policy the recycling rate of CDW in Bulgaria is higher than the EU-28 average.

**Keywords:** CDW recycling

**Link:** [https://www.interregeurope.eu/policylearning/good-practices/item/3446/boosting-the-construction-and-demolition-recycling-market/](https://www.interregeurope.eu/policylearning/good-practices/item/3446/boosting-the-construction-and-demolition-recycling-market/)

**Contact:**
Bulgarian Association of Recycling
T: +359 888811595
REFERENCES


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Bulgarian Development Bank website. Available at https://bbr.bg/en


Cleantech Bulgaria website. Available at cleantech.bg


Ecologica website. Available at ecologica.bg


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Eldrive website. Available at https://eldrive.eu/publichna-mreja-zariadni-stancii-elektromobili/

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Fund of funds


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IPS Group website. Available at https://ips-group.net/


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Move.bg Platform: a think-and-do tank for innovative solutions. Available at move.bg


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Ordinance on water consumption norms and fee for water abstraction, water use and pollution. Available at www.moew.government.bg/bg/ministerstvo/strategicheski-
celi/prioriteti-za-2016/otchet-za-izpulnenieto-na-celite-na-ministerstvoto-na-okolnata-sreda-i-vodite-za-2016-g

Public Procurement Agency website. Available at http://rop3-app1.aop.bg:7778/portal/page?_pageid=173,1082252&_dad=portal&_schema=PORTAL


PWC, 2018, Study of the potential of Green Public Procurement and guidance on preparing them. Available at http://www.aop.bg/fckeditor/user/File/bg/practika/Proekt_analitichen_doklad.pdf


Spark Company website. Available at http://spark.bg


Tangra AD website. Available at https://www.tangra.bg/company_EN.html

Virtual Lab for Eco-innovations. Information available at http://ecoinnovative.eu
## ANNEX: Policy strategies and instruments

### Table A1: National Policy strategies

<table>
<thead>
<tr>
<th>Name of the policy document (strategy, action plan, roadmap)</th>
<th>Relevance for eco-innovation</th>
<th>Relevance for Circular Economy</th>
<th>Relevance for the innovation chain</th>
<th>Input and process targets</th>
<th>Outcome and impact targets</th>
<th>Relevant implementation or governance system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Government Programme 2017–2021</td>
<td>Eco-innovation related priorities and measures available</td>
<td>Reuse Recovery</td>
<td>NR</td>
<td>None</td>
<td>None</td>
<td>Government is in charge</td>
</tr>
<tr>
<td>3 National Strategy for the Promotion of SMEs – 2014-2020 (Small Business Act) [<a href="https://www.sme.government.bg/en/uploads/2018/02/sme">https://www.sme.government.bg/en/uploads/2018/02/sme</a> stratégie-2014-2020_EN.pdf](<a href="https://www.sme.government.bg/en/uploads/2018/02/sme">https://www.sme.government.bg/en/uploads/2018/02/sme</a> stratégie-2014-2020_EN.pdf)</td>
<td>Vows to enable SMEs to turn environmental challenges into opportunities’ Only resource and energy efficiency mentioned</td>
<td>Yes, R&amp;D in SMEs</td>
<td>Commits to ‘providing more information, expertise and financial incentives in order to fully exploit the opportunities for new “green” markets and increased energy efficiency’</td>
<td>Only output targets</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>4 Europe 2020: National Reform Programme 2020 <a href="https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-bulgaria-en.pdf">https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-bulgaria-en.pdf</a></td>
<td>Indirectly relevant for eco-innovations through climate and energy • Recycling • Reuse • extraction of secondary raw materials and energy • More efficient water use</td>
<td>Yes, there is a mention of the BG performance of the EU Innovation Scoreboard</td>
<td>Innovation expenditure not resulting from R &amp; D (% of turnover) – reference value (2012) – 0.49, target value (2023) – 0.63. 2016 – 0.47 The necessary funds for the implementation of the activity of the 10th Competition Session is (BGN 5,541,322.80) within the budget of the Ministry of Economy</td>
<td>Share of innovative enterprises (% of the total number) – reference value (2012) – 27.4, target value (2023) – 30.4. 2016 – 27.2 Development of a modern scientific infra-structure 2020 – BGN 22.5 million Number of sup-ported scientific infrastructures; Enhancing the participation of Bulgarian re-searchers and</td>
<td>Yes</td>
<td></td>
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</tbody>
</table>


<table>
<thead>
<tr>
<th>Name of the policy document (strategy, action plan, roadmap)</th>
<th>Relevance for eco-innovation</th>
<th>Relevance for Circular Economy</th>
<th>Relevance for the innovation chain</th>
<th>Input and process targets</th>
<th>Outcome and impact targets</th>
<th>Relevant implementation or governance system</th>
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<tbody>
<tr>
<td></td>
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<td>For the period 2014-2020, under OPIC GFA of BGN 466 million will be provided.</td>
<td>scientific organisations in international cooperation</td>
<td></td>
</tr>
<tr>
<td>Energy intensity of the economy (change) – reference value – 0.471 (2012) tonnes of oil equivalent per 1,000 EUR GDP (2010 = 100) and 0.449 (2014), target value (2023) – 0.423. 2017 – 0.425 2018 – 0.414 Reduction of the quantity of fine particles in cities (reference value 1.79 μg/m3, target value 1.57 μg/m3;</td>
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<td></td>
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<td></td>
<td>Yes, the Ministry of Education and Science is the main implementing institution</td>
<td></td>
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<tr>
<td>National Digital Bulgaria 2025: programme and roadmap file:///C:/Users/Ruslan%20Zhechkov/Downloads/National%20Reform%20Programme%202020 ENG.PDF</td>
<td>Indirectly relevant</td>
<td>NR</td>
<td>Yes, cross-cutting</td>
<td>Investments in digital infrastructure; competence and excellence centres</td>
<td>Yes, increase of innovation activity of enterprises, offer of innovative products and services and introduction of an innovative process</td>
<td></td>
</tr>
<tr>
<td>Integrated Transport Strategy for the period until 2030</td>
<td>Indirectly relevant</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Name of the policy document (strategy, action plan, roadmap)</td>
<td>Relevance for eco-innovation</td>
<td>Relevance for Circular Economy</td>
<td>Relevance for the innovation chain</td>
<td>Input and process targets</td>
<td>Outcome and impact targets</td>
<td>Relevant implementation or governance system</td>
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<tr>
<td>10 National Strategy for Management of Construction and Demolition Waste for the period 2011–2020</td>
<td>Indirectly relevant</td>
<td>reuse, recycle, recovery</td>
<td>NR</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td></td>
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<tr>
<td>11 Innovation Strategy for Smart Specialisation (ISSS), 2014 – 2020</td>
<td>Indirectly relevant</td>
<td>Through cleantech</td>
<td>Yes, the whole innovation chain</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</table>

### Table A2: Policy instruments and measures

<table>
<thead>
<tr>
<th>Category</th>
<th>Name of instrument</th>
<th>Overall relevance for eco-innovation</th>
<th>Relevance for CE</th>
<th>Relevance for the innovation chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct financial support for eco-innovation</td>
<td>OP Innovation and Competitiveness</td>
<td>General innovation including eco-innovation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OP Environment</td>
<td>Minor role: aspects of eco-innovation through procedure BG16M1OP002-2.009 “Implementation of demonstration projects for waste management”</td>
<td>repair and maintenance reuse</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Name of instrument</td>
<td>Overall relevance for eco-innovation</td>
<td>Relevance for CE</td>
<td>Relevance for the innovation chain</td>
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<tr>
<td>4 Grant funding</td>
<td>Financial mechanism of the European Economic Area (EEAFM) 2014-2021</td>
<td></td>
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<tr>
<td>Innovation vouchers</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>5 Loans and credits</td>
<td>Energy Efficiency and Renewable Sources Fund <a href="http://www.bgeef.com">http://www.bgeef.com</a></td>
<td></td>
<td></td>
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<tr>
<td>6 Loans and credits</td>
<td>Technology Transfer Fund</td>
<td>Includes clean technologies and bio technologies</td>
<td>Indirectly, through bio technologies</td>
<td>Yes</td>
</tr>
<tr>
<td>Category</td>
<td>Name of instrument</td>
<td>Overall relevance for eco-innovation</td>
<td>Relevance for CE</td>
<td>Relevance for the innovation chain</td>
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<tr>
<td>Publicly co-funded venture capital funds (e.g. start-ups)</td>
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<tr>
<td>Fellowships and postgraduate loans and scholarships</td>
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<tr>
<td>Equity financing from public banks</td>
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<tr>
<td>Other (indicate)</td>
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<tr>
<td><strong>Indirect support for eco-innovation</strong></td>
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<tr>
<td><strong>10</strong></td>
<td>Tax incentives/relieves for eco-innovation (businesses, R&amp;D activity)</td>
<td>Waste Management Act</td>
<td>Economic instruments to encourage waste prevention and the recovery of waste prior to landfill (municipalities meeting targets pay only 50% of landfill charge)</td>
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</tr>
<tr>
<td></td>
<td>Tax relief for consumers adopting/ purchasing green technology/products</td>
<td>NA</td>
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<td></td>
<td>Taxation of environmentally harmful technologies</td>
<td>NA</td>
<td></td>
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<tr>
<td><strong>11</strong></td>
<td>Regulations, targets</td>
<td>Ordinance on product tax</td>
<td>Defines the obligatory product tax that needs to be paid for products introduced on the Bulgarian market: plastic bags; tyres; packaging material; batteries; oils; electronic equipment. A product tax is also due at the moment of registering a vehicle.</td>
<td>While the idea of a product tax is to dissuade the market to introduce the respective products on the market (as opposed to use recycled ones) it is a question if this goal is achieved given the very low levels of the tax.</td>
</tr>
<tr>
<td></td>
<td>Ordinance on construction waste management</td>
<td>NR</td>
<td>Support measures for CD recycled materials and their incorporation into new construction targets for integrating CD recycled materials in construction as follows: min. 2 % for new construction of buildings and</td>
<td></td>
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<tr>
<td>Category</td>
<td>Name of instrument</td>
<td>Overall relevance for eco-innovation</td>
<td>Relevance for CE</td>
<td>Relevance for the innovation chain</td>
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<tr>
<td>Demand subsidies (e.g. eco-vouchers/subsidies for green products)</td>
<td>NA</td>
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<tr>
<td>Labeling, certification, standards</td>
<td>EU Ecolabel</td>
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<td>Debt guarantees and risk sharing schemes</td>
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<tr>
<td>Training, advisory, information support, awareness raising</td>
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<tr>
<td>Technology transfer and business advisory services</td>
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<tr>
<td>Business incubation/accelerations</td>
<td>Cleantech Bulgaria Cleantech.bg</td>
<td>It is running three green entrepreneurial programmes (Danube Energy+ Tool, Power Up! 2020 and EIT Climate-KIC Accelerator)</td>
<td>Idea development</td>
<td></td>
</tr>
<tr>
<td>Eco-innovation challenges, prizes, awards</td>
<td>PowerUP! by EIT InnoEnergy 2020</td>
<td>Competition for start-up enterprises in Central and Eastern Europe in the fields of energy, smart technologies and mobility</td>
<td>NR</td>
<td>Idea development</td>
</tr>
<tr>
<td>Eco-innovation challenges, prizes, awards</td>
<td>National contest &quot;Innovative Enterprise of the Year&quot;</td>
<td>Yes</td>
<td>NR</td>
<td>NR</td>
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<tr>
<td>Training for companies, consumers,</td>
<td></td>
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<tr>
<td>Category</td>
<td>Name of instrument</td>
<td>Overall relevance for eco-innovation</td>
<td>Relevance for CE</td>
<td>Relevance for the innovation chain</td>
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<tr>
<td>Public awareness campaigns, platforms, and outreach activities</td>
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<td>other</td>
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<td>Collaborative platforms and infrastructure</td>
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<td>Clusters, networks, platforms (e.g. industrial symbiosis platforms)</td>
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<td>Dedicated support to new research infrastructure (piloting facilities)</td>
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About the Eco-Innovation Observatory (EIO)

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.

Visit EIO and DG ENV EcoAP website and register to get access to more information and to access all EIO reports, briefs and databases.

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