Resource efficiency and circular economy in Europe – even more from less

An overview of policies, approaches and targets of Bulgaria in 2018

July 2019

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Acknowledgements

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This country profile was prepared as part of the 2019 EEA review of material resource efficiency, circular economy and raw material supply policies, which aimed to collect, analyse, and disseminate information about experience with the development and implementation of these policies in EEA member and cooperating countries.

At the time of writing, a summary report is being finalised. The report reflects on trends, similarities and differences in policy responses, showcases selected policy initiatives from member countries and identifies possible considerations for the development of future policies.

These country profiles were compiled and finalised by members from the European Topic Centre on Waste and Materials in a Green Economy, namely Bart Ullstein, Bettina Bahn-Walkowiak, Jeroen Gillabel, Margareta Wahlström, Jutta-Laine Ylijoki, Dirk Nelen, Theo Geerken, Veronique Van Hoof and Evelien Dils. The responsible EEA project managers for the work were Pawel Kazmierczyk and Daniel Montalvo.

Bulgaria, facts and figures

Note: data in this section was sourced from Eurostat databases (April 2019), except where noted otherwise

GDP: EUR 51.7 billion (0.3 % of total EU28 in 2017)

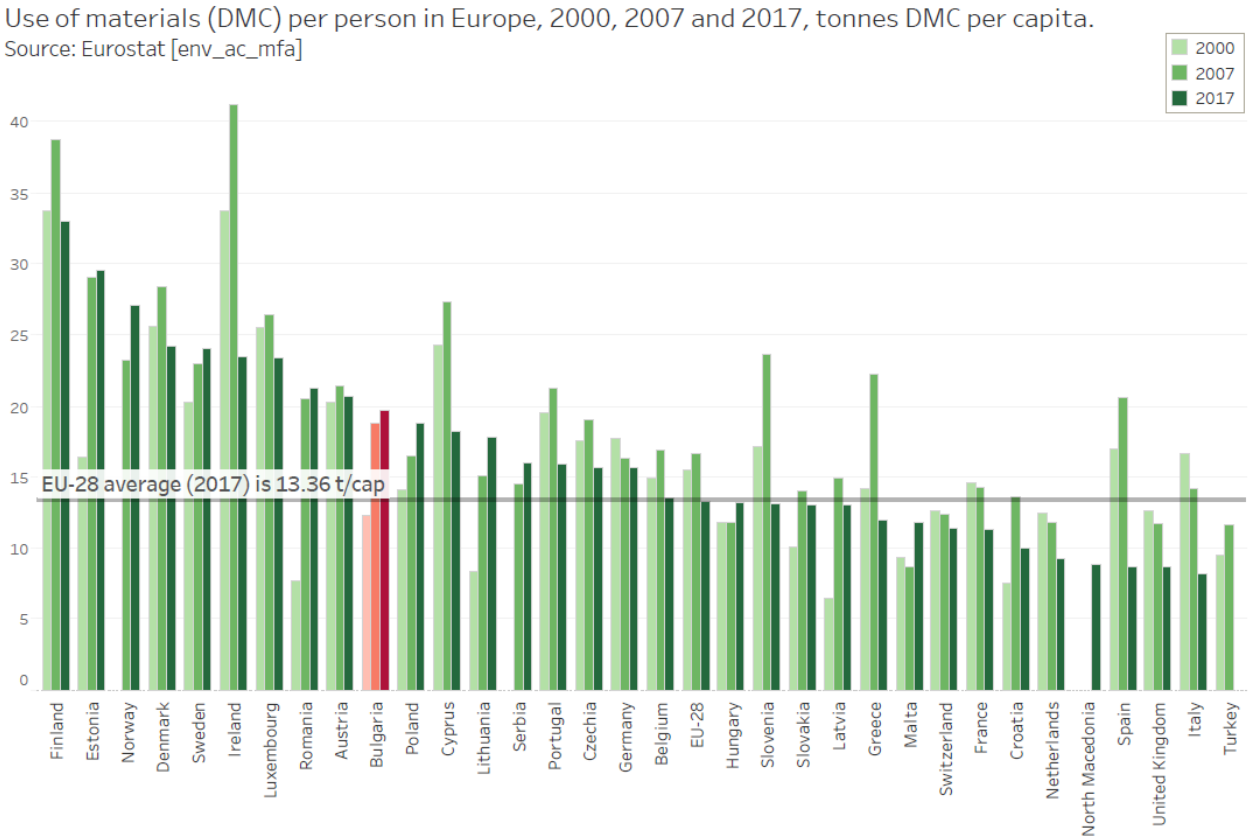
Per capita GDP: 7,300 EUR (purchasing power standard) (24.3 % of EU28 average per capita figure in 2017)

Use of materials (domestic material consumption (DMC))
139.1 million tonnes DMC (2.0 % of EU28 total in 2017)
19.7 tonnes DMC per capita (147.1 % of EU28 average per capita in 2017)

Structure of the economy:
agriculture: 4.7 %
industry: 28.4 %
services: 66.9 %

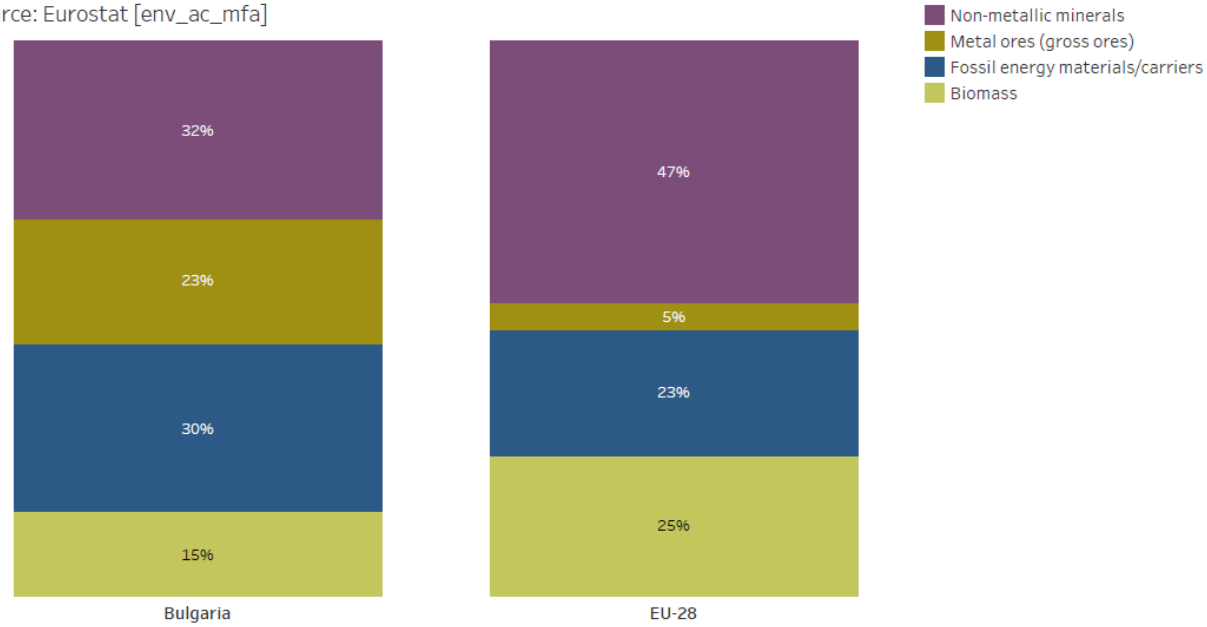
Surface area: 111 thousand square kilometres (km^2) (2.5 % of total EU28)

Population: 7.1 million (1.4 % of EU28 total in 2017)



Bulgaria & EU-28. Domestic Material Consumption by material category, 2017.

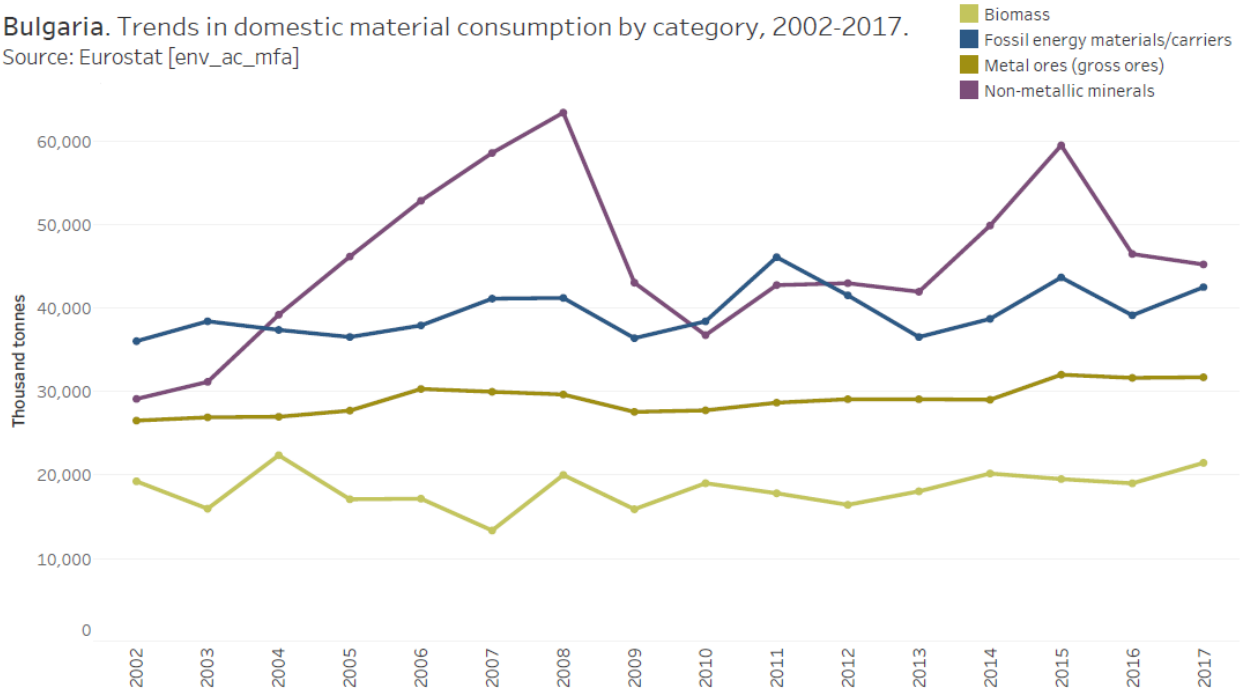
Source: Eurostat [env_ac_mfa]



Note: The domestic material consumption categories 'other products' and 'waste for final treatment and disposal' are excluded from the figure.

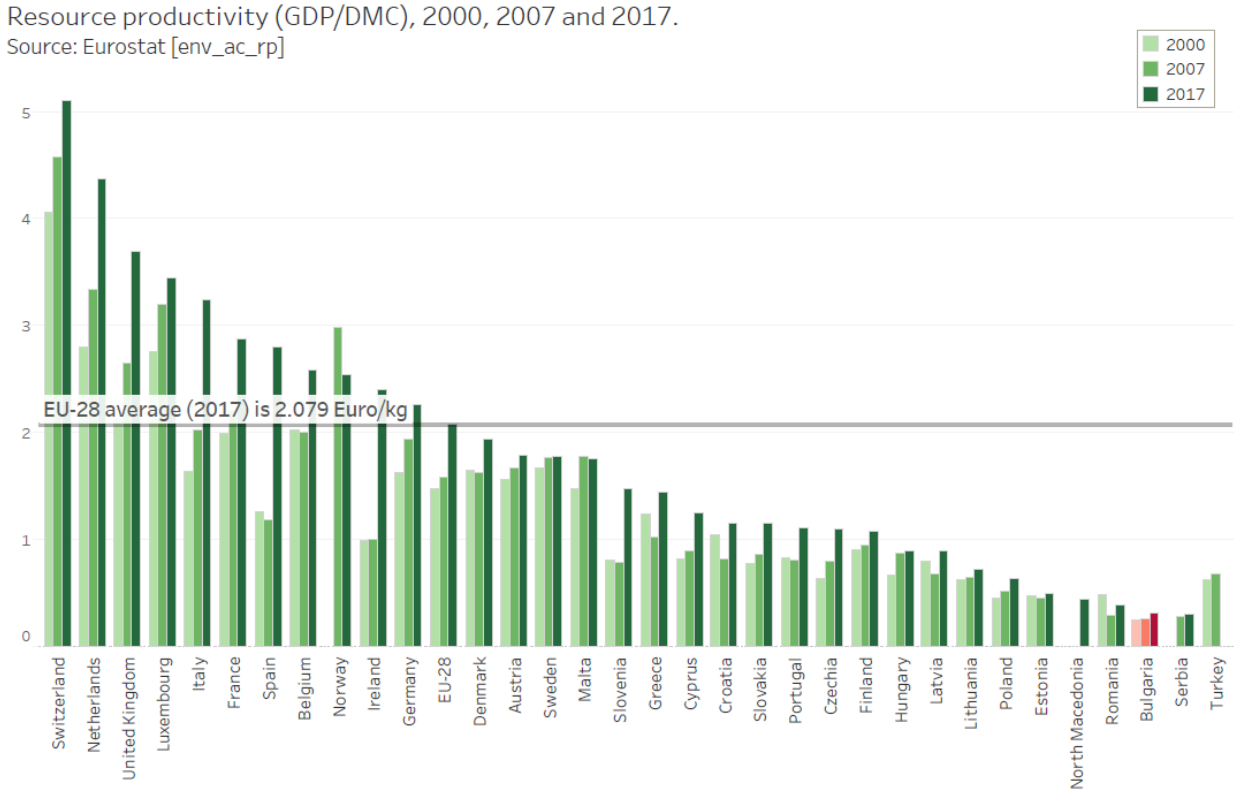
Bulgaria. Trends in domestic material consumption by category, 2002-2017.

Source: Eurostat [env_ac_mfa]



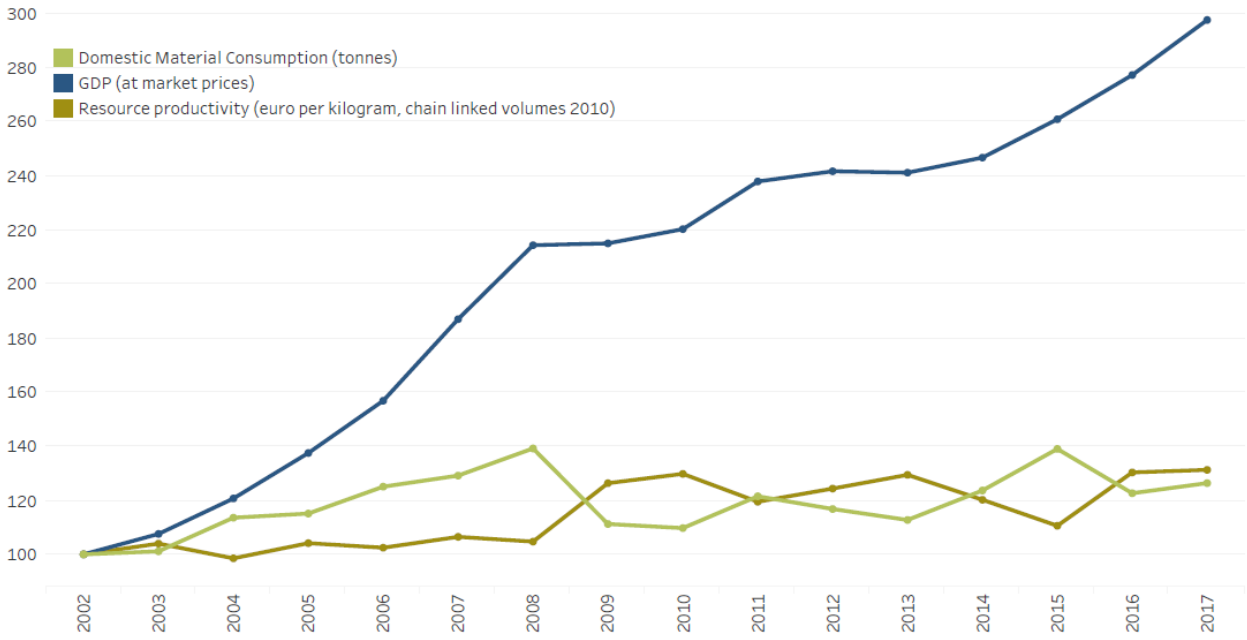
Note: The domestic material consumption categories 'other products' and 'waste for final treatment and disposal' are excluded from the figure.

Resource productivity (GDP/DMC), 2000, 2007 and 2017.
Source: Eurostat [env_ac_rp]

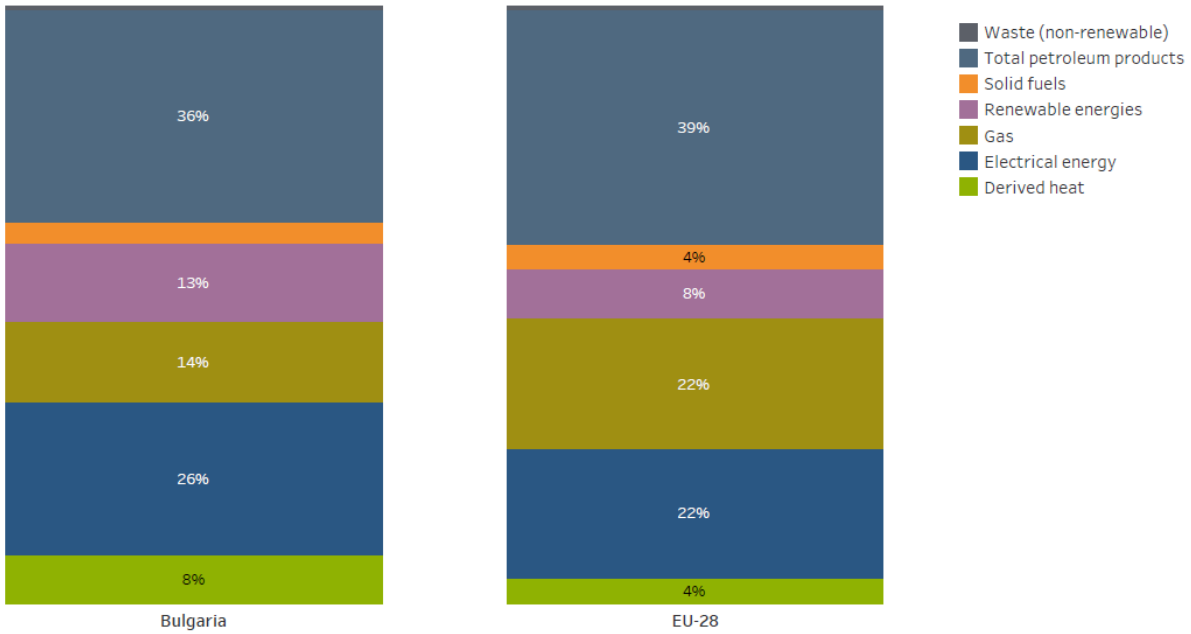


Note: GDP expressed in chain linked volumes 2010.

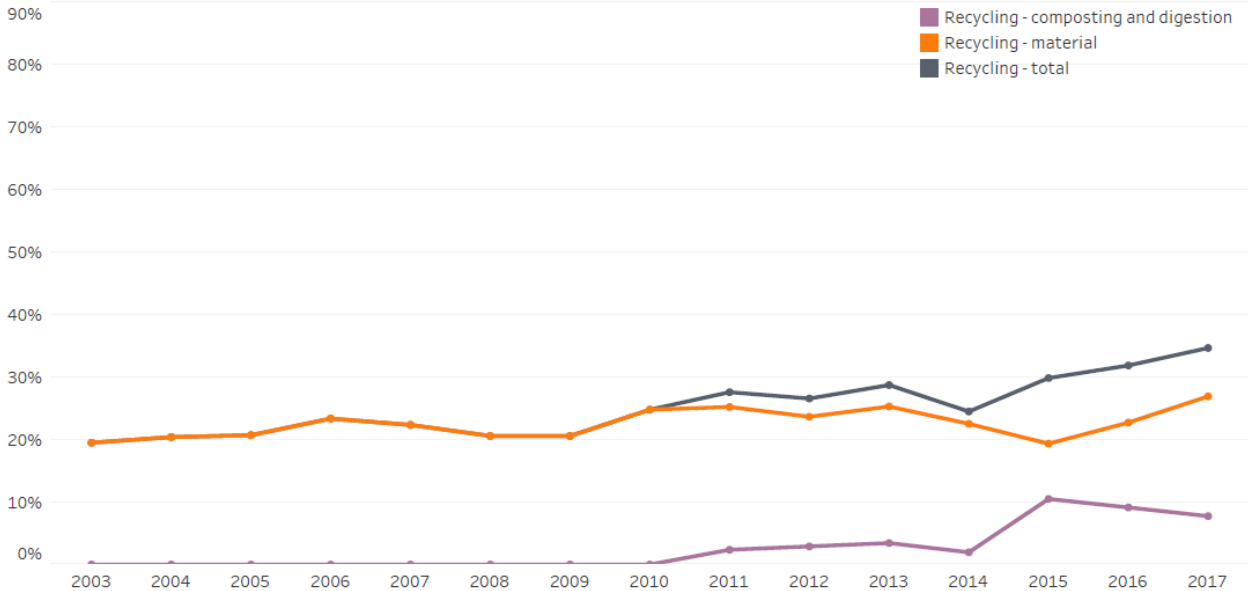
Bulgaria. GDP, DMC and resource productivity trends, 2002-2017, index 2002=100.
Source: Eurostat [env_ac_mfa], [env_ac_rp] & [nama_10_gdp]



Bulgaria & EU-28. Primary energy consumption by energy product, 2016.
Source: Eurostat [nrg_100a]



Bulgaria. Recycling of municipal waste, 2003-2017, as share of total waste treatment.
Source: Eurostat [env_wasmun]



Note: The amount of municipal waste treatment is reported for the treatment operations incineration (with and without energy recovery), recycling, composting and landfilling.

Policy framework

Driving forces for material resource efficiency and circular economy

The main motivation for material resource efficiency and circular economy in Bulgaria is the national policy struggle for achieving the Sustainable Development Goals (SDGs) by 2030, mainly Goal 12: Responsible Consumption and Production. Furthermore, it is very important to endorse incentives for improved product design. Acting in accordance with the common EC guidelines: promote the best available technique reference documents (BREFs) for a range of industrial sectors; perform a fitness check of the product environmental footprint; propose an improved labelling system for energy performance of energy-related products; promote waste prevention and reuse through exchange of information and biodiversity action plans and the adoption of revised legislative proposals on waste, by providing Cohesion Policy funding for projects at local, regional and interregional level.

One of the main national goals in this respect is to improve the efficiency and environmental performance of raw materials supply to benefit the principles of the circular economy.

Furthermore, complying with waste management regulations is a strong factor.

Dedicated national strategies or roadmaps for material resource efficiency and for circular economy

A national resource efficiency strategy does not yet exist in Bulgaria, however, there is a key strategic framework for achieving resource-efficient and sustainable waste management within the National Waste Management Plan (NWMP) 2014–2020 (more details in section: Policies which include elements of material resource efficiency).

The Bulgarian government has not adopted a national circular economy strategy, though the Governmental Programme 2017–2021 includes circular economy goals and ways of fulfilling them. As part of the Governmental Programme 2017–2021, a national circular economy strategy is to be developed in the period 2018–2019, including a roadmap. According to pre-planned activities, the development of a concept for the circular economy is envisaged in the context of waste management and related areas. The Strategy and Action Plan for the Circular Economy in the Republic of Bulgaria will cover the period 2021–2030.

Overview of dedicated national or sectoral strategies for raw materials

National Strategy for Development of the Mining Industry, adopted September 2015[1]

The National Strategy for Development of the Mining Industry aims at the sustainable development of the mining industry by ensuring a balanced economic, social and ecologically responsible approach to the exploration, extraction and processing of mineral resources in Bulgaria. This Strategy encompasses resource efficiency goals and activities, including the below.

Strategy goal: improving the effective use of mineral resources – with efficient technologies ensuring their appropriate extraction and utilisation.

Operational objectives:

- Encourage private sector investment in research and innovation aimed at improved and efficient use of mineral resources.
- Activity: impose licences for exploration rights to drive investment in research and innovation towards improving the efficiency of mineral resource use.

[1] http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=968 (Bulgarian)

- Assist mining companies to work together to benefit from the waste and by-products they generate, for example by using industrial symbiosis whereby the waste of some enterprises is used as a resource in others.
- Activity: provide incentives for creating industrial clusters.

Strategy goal: improvement of environmental policies for ecological zones and protected areas, preservation of ecological integrity of mining areas. Implementation of technologies that reduce both negative impacts on the environment and the generation of mining waste. Turning mining waste into resources and reducing mining waste generation per person.

Operational objectives:

- Preservation of the Earth's subsurface, assuring appropriate processing of mining resources at each stage – exploration, extraction and primary processing.
- Activities: increase mining efficiency and mining resources processing through implementation of state-of-the-art technologies; promote the development of non-traditional raw materials and renewable materials use.
- Regulating the priority of mining waste recovery and the extraction of valuable components rather than granting extraction rights on newly discovered deposits.
- Activities: legislation amendments; implementation of good mining waste management practices, including for waste reduction; implementation of best standards for decommissioning activities; expanding the possibilities for waste treatment and recovery.

A National Strategic Plan for the Management of Construction Waste is being developed with a view to reducing the harmful environmental impact of waste generated as a result of construction activities, while ensuring the high quality of the built environment.
To achieve this vision, a major strategic goal has been set for Bulgaria to have a developed construction waste management system by 2020 that provides at least 70 per cent cost-effective recycling to stop environmental pollution and minimises the environmental impact of waste generated as a result of construction activities.

Policies which include elements of material resource efficiency

Government Programme 2017–2021[2]

The current Bulgarian Government Programme 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', and the following measures:

- 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 European Union's (EU) Circular Economy Package.

The Bulgarian government has not adopted a national circular economy strategy, though the Governmental Programme 2017–2021 contains circular economy goals and ways of fulfilling them. One of the targets of this Programme sets a priority for achieving resource efficiency through application of the waste management hierarchy, prevention of waste generation, promotion of recycling and recovery by recycling, reduction of landfill, and limiting waste's harmful effects on the environment and human health. This should be implemented through further development of a waste pre-treatment infrastructure for

[2] http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=1240 (Bulgarian)

waste utilisation in 17 regions and the development of a National Strategy for the Circular Economy Package.

The National Circular Economy Strategy is to be developed in the period 2018–2019, including a roadmap. According to pre-planned activities, the development of a concept for the circular economy is envisaged in the context of waste management and related areas. Preparation of a common roadmap and initial assessment of the concept include an economic and social analysis of phased implementation and the costs associated with transition. The Strategy and Action Plan for the Circular Economy in the Republic of Bulgaria will cover the period 2021–2030.

Innovation Strategy for Smart Specialisation of the Republic of Bulgaria 2014–2020[3]
This Strategy considers resource efficiency innovation in the waste sector and includes mechatronics and clean technologies as one of four thematic areas of specialisation. It implements technological modernisation in the manufacturing sector by using resource-efficient/waste-free technologies that reduce pollution at source, reducing carbon emissions.

Goal 2 of the Strategy is 'Support for the accelerated uptake of technologies, methods, etc., for the improvement of resource efficiency and the application of information and communications technology (ICT) in enterprises of all industries'. The priority activities under this goal include the promotion of innovation for resource efficiency in the water sector (reuse and recycling of water, water and wastewater treatment, including resource recovery; and intelligent monitoring systems) and in the waste sector (waste prevention, collection, recycling and recovery; and introduction of high-tech information and communication systems for reporting quantities of waste collected from the population).

Partnership Agreement of the Republic of Bulgaria, outlining assistance from the European Structural and Investment Funds for 2014–2020[4]
The Partnership Agreement determines the purposes and priorities of the Republic of Bulgaria when using resources from the European Structural and Investment Funds for the 2014–2020 programming period, and outlines the main investment spheres and activities for achieving sustainable, inclusive and intelligent growth. Priorities include increasing the resource efficiency and competitiveness of small and medium-sized enterprises (SMEs), and moving towards a low-carbon economy and energy and resource efficiency

Europe 2020: National Reform Programme 2018[5]
In line with the Europe 2020 Strategy endorsed by the European Council in June 2010, Member States are developing a National Reform Programme (NRP) in the framework of the EU's European Semester for better economic policy coordination. Member States report on their economic and structural reform commitments to achieve the Europe 2020 national targets for meeting the priorities of the Annual Growth Survey as well as the recommendations of the EU Council in the framework of macroeconomic surveillance and thematic coordination. The National Reform Programme for 2018 sets a measure for 'promoting investment in facilities, systems and business models for using waste as a resource to support the circular economy'.

Waste Management Act
The Bulgarian Waste Management Act (WMA), which entered into force in July 2012, introduces the requirements of the Waste Framework Directive (WFD) (2008/98/EC), including the polluter-pays and extended-producer-responsibility principles and the waste management hierarchy. For the first time, it introduces targeted operational goals for recycling municipal and construction and demolition waste; it further introduces economic and regulatory mechanisms and instruments for the application of the relevant legislation as well as rules for management of widespread waste. It sets out the end-of-waste and

[3] http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=948 (Bulgarian)
[4] http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=918 (Bulgarian)
[5] http://www.minfin.bg/en/867 (English)

by-product approaches and presents in detail the control functions of relevant institutions as well as the specific fines and sanctions for non-compliance with the law.

The key legal provisions stemming from the WMA are quantitative goals established for the preparation, reuse and recycling of waste materials, including, at the very least, paper and cardboard, metal, plastic and glass from households and similar waste from other sources, which the municipalities need to meet within the following deadlines:

- by 1 January 2016 – at least 25 per cent of their total weight;
- by 1 January 2018 – at least 40 per cent of their total weight;
- by 1 January 2020 – at least 50 per cent of their total weight.

The Act introduces a requirement for municipalities to reduce, by 2020, the quantity of biodegradable household waste sent to landfill to 35 per cent of the total quantity of such waste generated in 1995, and to meet the following staged goals for reuse, recycling and other forms of recovery of waste from the construction and demolition of buildings. This is the responsibility of the contracting authorities for construction works, be they a public institution or a business.

- by 1 January 2016 – at least 35 per cent of the total weight of the waste;
- by 1 January 2018 – at least 55 per cent of the total weight of the waste;
- by 1 January 2020 – at least 70 per cent of the total weight of the waste.

Municipalities must organise systems for the separate collection of household waste paper and cardboard, metals, plastic and glass, as well as ensuring the appropriate conditions for separate collections of waste from packaging in all settlements with a population of more than 5,000 inhabitants and for resorts. Municipalities must ensure the availability of sites for free deposition of separately collected household waste, including bulky, hazardous and other forms of waste, in all settlements with a population of more than 10,000 inhabitants and, where necessary, other settlements.

The users of commercial sites, manufacturing, business and administrative buildings in settlements of more than 5,000 inhabitants and in resorts are required, as of the beginning of 2013, to collect paper and cardboard, glass, plastic and metal wastes separately in compliance with the ordinances of the municipalities under the WMA.

National Waste Management Plan 2014–2020

The fourth National Waste Management Plan (NWMP), the key strategic framework for achieving resource-efficient and sustainable waste management, outlines the transition from managing waste to its efficient use as a resource, and to sustainable development by preventing waste as far as possible. Successful implementation will lead to preventing and reducing the harmful effects of waste on the environment and human health and reducing the use of primary natural resources.

The Plan supports central and local authorities to concentrate limited resources from national and European funding sources on priority projects in the field of waste management. It includes, as separate annexed documents, a Waste Prevention Programme on preparation for reuse and recycling of municipal paper, metal, plastic and glass waste; and a range of programmes for achieving the objectives and requirements for biodegradable waste including biowaste; the recycling and recovery of construction waste and demolition waste; the recycling and recovery targets for widespread waste; improved management hierarchy of other waste streams and reducing environmental risk from municipal waste landfill; improved institutional capacity on waste management; improved quality of information to support waste management decision making; and improved awareness and participation of businesses and the public in waste management activities.

The NWMP includes an Action Plan with eight programmes, including the newly adopted National Waste Prevention Programme, and sets specific quantitative targets for preparation for reuse, recycling and other forms of recovery for specific wastes.

Since 2007, Bulgaria has adopted several further waste sub-strategies, including the National Strategic Plan for a Phased Reduction of the Quantities of Landfilled Biodegradable Waste for the period 2010–2020. In 2011, the National Strategic Plan for Management of Construction and Demolition Waste for the period 2011–2020 provided the first strategic framework for coordinated management of construction and demolition waste.

In addition, as part of the Governmental Programme 2017–2021, a national circular economy strategy is to be developed in the period 2018–2019, including a roadmap. According to pre-planned activities, the development of a concept for the circular economy is envisaged in the context of waste management and related areas. Preparation of a common roadmap and initial assessment of the concept include economic and social analysis of phased implementation and the costs associated with transition. The Strategy and Action Plan for the Circular Economy in the Republic of Bulgaria will cover the period 2021–2030.

The National Strategic Plan for the Stage-by-Stage Reduction of Biodegradable Waste for Disposal 2010–2020[6]

This is the first plan in the country that conducts an in-depth systematic analysis of the environmental problems resulting from the disposal of biodegradable waste. It defines the problems and identifies measures (administrative, legal, financial and others) for overcoming the problems and for meeting the goals for a stage-by-stage reduction of the disposal of these wastes and for increasing the amounts of recycled and recovered waste. It is anticipated that, as a result of implementing the Plan, the disposal of 5 million tonnes of biodegradable waste will be prevented by 2020. An additional effect is the substitution in agriculture of phosphate fertilisers with compost. The measures in the Plan are key for the achievement of the goals of the third National Action Plan for Climate Change for the period 2013–2020 to reduce greenhouse gas emissions from the waste sector.

The National Strategy for Management of Construction and Demolition Waste for the period 2011–2020[7]

This is also the first to be elaborated in the country for this field. The 2014 Plan for Management of Construction and Demolition Waste determines measures (administrative, legal, financial and others) for increasing the recycled and recovered quantities of this waste stream, which is mainly subject to disposal. The main strategic goal of the Plan is to decrease, by 2020, the negative impact of construction and demolition waste on the environment and to reach 70 per cent recycling of associated waste. Installations for recycling construction materials are in the process of operationalisation as part of the integrated regional municipal systems for waste management.

The National Renewable Energy Action Plan (NREAP)

The Ministry of Energy (ME) is responsible for renewable energy policy. Measures for utilising the energy potential of biomass are implemented within this policy.

Implementation of the approach for cascading the use of biomass, the principles of resource efficiency and the circular economy in the energy utilisation of biomass are implemented within the framework of the waste management policy, which is outside the competence of the ME.

The National Renewable Energy Action Plan (NREAP) is the basic strategic document for renewable energy for the period 2011–2020.

The NREAP is based on Art. 4, para.1 of Directive 2009/28/EC and in accordance with Art. 4, para. 2, item 1 and Art. 12 of the Energy from Renewable Sources Act. The NREAP includes targets for the production of electricity, heating and cooling, and energy from renewable sources in transport by 2020. It contains

[6] http://www.moew.government.bg/static/media/ups/tiny/file/Waste/Biowaste/biowaste_strategy_2010.pdf (Bulgarian)

[7] http://www.moew.government.bg/static/media/ups/tiny/file/Waste/cdw/NSPUOSR-final.pdf (Bulgarian)

estimates of the total contribution expected from each renewable energy technology, part of which is biomass, including solid and liquid biomass and biogas.

The NREAP is published on the Public Consultation Portal[8] and EC websites in Bulgarian and English[9]. Pursuant to Art. 22, par. 1 of Directive 2009/28/EC, Bulgaria presents biennial reports[10] to the EC on progress in the promotion and use of energy from renewable sources.

Institutional setup and stakeholder engagement

There is no special authority for the coordination of resource efficiency policies. Different public bodies are responsible for different issues. It is up to the authority with the lead role to coordinate any initiatives for resource efficiency. The main institutions responsible for the development and implementation of material resource efficiency policies are:

- Ministry of Environment and Water[11];
- Ministry of Economy[12];
- Ministry of Energy[13];
- Municipalities[14].

With the aim of harnessing expertise, improving quality and transparency in decision-making, and ensuring active cooperation with environmental non-governmental groups/organisations and other participants in the public process of forming positions and taking initiatives by the Ministry of Environment and Water (MoEW) for the development and implementation of state policy on environmental protection, NGOs are invited to participate in the advisory boards to the MoEW. These include the Public Council to the Minister of Environment and Water, Supreme Expert Environmental Council, National Biodiversity Council, Supreme Advisory Council on Water, Consultative and Coordination Council on the Protection of the Environment in the Black Sea, Advisory Committee on Genetically Modified Organisms (GMO), and the Advisory Council on Climate Change, amongst others. This practice is also applied by other authorities – the National Economic Council to the Ministry of Economy, for example.

Draft framework positions of the State for matters to be considered at meetings of the working bodies of the Council of the EU (including in relation to the total EU contribution to international initiatives, processes, agreements, etc.) are coordinated/agreed within Working Groups of the National Council for European Affairs, whose members include representatives of associations of NGOs, syndicates, trade unions and others. This ensures the participation of the public concerned in the coordination and preparation of national positions for negotiations at the EU level.

At the earliest possible stage of the decision-making process, the public and non-governmental organizations (NGOs) are given an opportunity to express their views on draft regulations, strategies, plans and programmes through the MoEW web pages and the Portal of the Council of Ministers for Public Consultations. The Portal of the Council of Ministers is also actively used by other authorities.

Under the Statutory Instruments (Normative Acts) Act, any draft statutory instrument (legally binding normative instrument/regulation/act) must undergo public consultation with citizens and legal entities before it is issued or adopted by the relevant authority. The author of the draft must post it on the website of the relevant institution together with the rationale or report behind it and an *ex-ante* impact

[8] http://www.strategy.bg (Bulgarian)
[9] https://ec.europa.eu/energy/en/topics/renewable-energy/national-action-plans (English)
[10] https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports (Bulgarian and English)
[11] http://www.moew.government.bg/ (Bulgarian)
[12] http://www.mi.government.bg/ (Bulgarian)
[13] http://www.me.government.bg/ (Bulgarian)
[14] http://www.namrb.org/lang/en (English)

assessment. When the author of the draft is a body belonging to the executive branch, the draft is posted on the Public Consultations Portal, and when the author is a local government, the draft is posted on the website of the relevant municipality and/or municipal council.

The period for submission of proposals and opinions on the drafts posted for public consultation is no less than 30 days. For the corresponding report, the author of the draft may set a period of no less than 14 days.

Upon completion of the public consultation and before the adoption or issuance of the statutory instrument, the author of the draft posts information about submitted proposals together with reasons for the rejected ones on the website of the relevant institution. When the author of the draft is a body belonging to the executive branch, the information is posted simultaneously on the Public Consultations Portal.

According to the Regulation on the Structure and Functions of the Council of Ministers and its Administration, each promoter/author of a draft normative act prepares a report summarising the results of the public consultation, and this report is an integral part of the package of documents submitted to the Council of Ministers and the National Assembly.

Approaches to resource efficiency and circular economy policy evaluation

Bulgaria has introduced regulatory impact assessment as an obligatory step in the law-making procedure. The Statutory Instruments Act introduced mandatory preliminary partial impact assessments (at the earliest stage, before elaboration of the legal act, code, law, ordinance, etc.) and full impact assessments as necessary in some cases. There can be partial or full *ex-ante* impact assessments.

Partial *ex-ante* impact assessments precede the development of every draft law, code or secondary legislation of the Council of Ministers.

Full *ex-ante* impact assessments are undertaken if:

1. a new law or code is being developed;
2. the partial assessment has demonstrated that the draft act can be expected to have significant repercussions.

In addition, a full *ex-ante* impact assessment can be made at the discretion of the author of the draft act. The authority whose competence it is to implement a particular act undertakes an *ex-post* impact assessment if the instrument is a new law, code or secondary legislation of the Council of Ministers. The *ex-post* impact assessment is made within five years of the entry into force of the new law, code or secondary legislation of the Council of Ministers or within a shorter period defined by the authority.

Monitoring and targets

Targets for resource efficiency and circular economy

There are no specific targets for material resource efficiency in Bulgaria. The most relevant (aspirational) objective concerns packaging waste, which is set annually by the National Waste Management Plan 2014–2020 (NWMP), for each year of the Plan.

- Not less than 60 per cent by weight of packaging waste must be recovered or incinerated in waste incinerators with energy recovery.
- Not less than 55 per cent and not more than 80 per cent by weight of packaging waste must be recycled, as recycling should be not less than:

a) 60 per cent by weight of glass packaging waste;
b) 60 per cent by weight of paper and cardboard packaging waste;

c) 50 per cent by weight of metal packaging waste;
d) 22.5 per cent by weight of packaging waste plastic, with recycling of plastic only;
e) 15 per cent by weight of wood packaging waste.

- Systems for separate collection of packaging waste cover not less than 6 million inhabitants of the country and must include resort towns and all cities with a population of 5,000 inhabitants or more.

All targets concerning specific waste streams are also found in the NWMP[15].

Waste Management Act

Quantitative goals are established for the preparation, reuse and recycling of waste materials, including, at the very least, paper and cardboard, metal, plastic and glass from households and similar waste from other sources, which the municipalities need to meet within the following deadlines:

- by 1 January 2016 – at least 25 per cent of their total weight;
- by 1 January 2018 – at least 40 per cent of their total weight;
- by 1 January 2020 – at least 50 per cent of their total weight.

The Act introduces a requirement for municipalities to reduce, by 2020, the quantity of biodegradable household waste sent to landfill to 35 per cent of the total quantity of such waste generated in 1995, and to meet the following staged goals for reuse, recycling and other forms of recovery of waste from the construction and demolition of buildings, which is the responsibility of the contracting authorities for construction works, be they a public institution or a business:

- by 1 January 2016 – at least 35 per cent of the total weight of the waste;
- by 1 January 2018 – at least 55 per cent of the total weight of the waste;
- by 1 January 2020 – at least 70 per cent of the total weight of the waste.

Indicators to monitor progress towards a resource-efficient circular economy

Monitoring is based on Eurostat-derived indicators presented in the Resource Efficiency Scoreboard and Monitoring Framework for the Circular Economy. The country does not complement this with its own framework of 'material' indicators.

The main indicators for monitoring the decoupling of environmental impacts from economic growth are the energy intensity of the economy and final energy consumption.

There is a specific procedure under secondary legislation of the WMA that requires the Executive Director of the Executive Environment Agency to summarise and publish, by 30 September each year, information about the municipalities' and regions' fulfilment of legislative objectives for separate collection systems for reuse, recycling and recovery of municipal waste. This aims to ensure that, no later than 1 January 2020, targets are met on the preparation for reuse and recycling of at least 50 per cent of the total weight of waste materials, including paper and cardboard, metal, plastic and glass from households and similar waste from other sources.

The following indicators, set out in the Operational Programme 'Environment' (OPE), are applicable for monitoring progress towards a resource-efficient circular economy (in accordance with the measures listed under section 'Examples of good practice and innovative approaches').

Under Priority Axis 1, Water

[15] http://www.moew.government.bg/files/file/Waste/NACIONALEN_PLAN/NPUO_ENG_22_10_2014_06_01_2015.pdf (Bulgarian)

- Programme-specific result indicator: the amount of pollution load that receives full collection and treatment in compliance with legislation. Baseline value for 2013 versus target value for 2023. Frequency of reporting: 2019, 2021 and 2023.

Under Priority Axis 2, Waste

- Programme-specific result indicator: the amount of waste going to landfill (tonnes). Baseline value for 2012; target value for 2023. Frequency of reporting: 2019, 2021 and 2023.
- Programme-specific output indicators:
  - additional waste recycling capacity (tonnes per year). Target value for 2023. Frequency of reporting: annual;
  - additional capacity for recovery of waste (to generate energy) (tonnes per year). Target value for 2023. Frequency of reporting: annual.

Examples of innovative approaches and good practice

Examples of good practice and innovative approaches

Taxation and economic instruments to encourage investment in resource efficiency and circular economy

The Waste Management Act (WMA) introduces economic instruments to encourage waste prevention and the recovery of waste prior to landfill. Resources are to be spent on the construction of new facilities for the treatment of municipal and construction and demolition waste, ensuring that municipalities comply with the requirements of the WMA and the statutory instruments of secondary legislation for its implementation.

Under the WMA, municipalities have the responsibility for waste management, including the setting of quantitative targets for biodegradable waste and a normative framework for biowaste. Thus, municipalities are obliged to organise separate collection of biodegradable waste. Under a project financed by EU funds, a detailed legal framework was developed to encourage source-separated waste collection and composting. Technical requirements for compost are also regulated, including end-of-waste status. The legal framework was developed in collaboration with leading experts in Europe.

Commitments of municipalities are regulated for the implementation of separate collection and recycling systems for biowaste (food and green waste as part of the household waste stream) as well as information for evaluating the fulfilment of objectives. The main criteria set out for the treatment of biowaste include quality requirements for compost, the end-product of fermentation, organic soil improver and the stabilised organic fraction from mechanical-biological treatment (MBT). The conditions under which the compost and post-fermentation product cease to be waste and can be placed freely on the market are defined. There are requirements for sampling of biowaste materials, as well as for minimum labelling requirements and areas of use of the final products.

Economic instruments have been introduced to encourage municipalities to improve performance in the recovery and recycling of household waste. Those who meet specified targets for recycling household waste are exempt from 50 per cent of the charges due for waste disposal. There is also an economic incentive for municipalities to provide sites for the delivery of separately collected waste from citizens and companies in the form of an additional 15 per cent charge on those that do not provide the appropriate infrastructure.

The law also enables municipalities to use the charges they receive for disposal to finance investment in recycling and other recovery of household waste.

Regarding the management of construction waste and the use of recycled building materials, responsibilities are allocated to local, regional and central authorities with the following key requirements:

- the contracting entity of an investment project is responsible for meeting the targets for recycling of construction waste;
- the contracting entity is required to develop a plan for managing construction waste as part of its construction documentation for the investment project for the issue of a building permit, which is approved together with the entire design project.

Management requirements for construction waste include the tracking of waste quantities from the moment of generation to delivery for recycling or disposal. This mechanism enables the competent authorities to implement legislative requirements both preventively when a building permit is issued, and subsequently via the control of executed works and procedures for site commissioning.

The contracting entities of investment projects financed with public funds are responsible for the use during construction of a certain percentage of recycled materials or material recovery in backfilling. These percentages will increase gradually up to 2020.

The contracting entities of construction and assembly works and/or removal of structures that are not covered by the preceding paragraph must meet minimal targets for selective separation and material recovery of certain types of waste.

The legislation includes binding targets for recycling of household waste, including at least paper and cardboard, metal, plastic and glass.

There is a legal requirement for administrative, economic, educational, business and other similar entities that generate waste to separate waste paper and cardboard, plastic, glass and metal for delivery to authorised companies and organisations.

More than 6 million inhabitants of the country are covered by separate collection systems for waste packaging, paper and metal, plastic and glass. This is not only an important prerequisite for national targets for recycling and recovery of packaging waste, but is also a contribution to local and national objectives to recycle at least 50 per cent of municipal waste by 2020.

Under national law, annual targets for recycling and recovery of six groups of widespread waste have been set: packaging waste – from 2000; end-of-life vehicles (ELVs) – from 2005; waste electrical and electronic equipment (WEEE) – from 2006; waste oils and petroleum products – from 2006; waste batteries and accumulators – from 2006; and waste tyres – from 2011. Targets for recycling and recovery of packaging waste, ELVs, WEEE and batteries and accumulators are set at the European level, while national targets have been set and are being implemented for waste tyres and waste oil and oil. Targets for the recovery and recycling of the six groups of waste have been successfully implemented throughout the country by a scheme based on extended producer responsibility.

Accomplished and planned activities/projects

About 10 facilities for the separation of useful components of municipal waste are already functioning as a result of public-private partnerships between packaging waste recovery organisations, as well as financial assistance from the Enterprise for Management of Environmental Protection Activities (EMEPA), which is the national environmental fund. Funding of such activities is within the annual budget of EMEPA, as the enterprise is included in Bulgaria's consolidated fiscal programme.

Funded by the Operational Programme 'Environment' (OPE) 2007–2013, 19 regional landfill sites for solid municipal waste were built as part of regional waste management systems. These systems also include the development of pre-treatment facilities with waste separation and composting facilities. The population covered so far is 4,118,288 people. In addition, 11 separation installations with a capacity of 731,215 tonnes per year have been built.

Furthermore, the OPE 2007–2013 funded 18 composting installations for more than 200,000 tonnes per year. In Sofia, Bulgaria's largest and capital city, a modern facility for biodegradable waste already operates to produce energy and compost while a mechanical biological treatment (MBT) facility is under construction; MBT facilities are also operating in the other two big cities – Plovdiv and Varna.

The OPE 2014–2020 contributes to Resource Efficient Europe financing activities in response to the MoEW Guidelines on the Integration of Environment and Climate Change in Cohesion Policy (CP), Common Agricultural Policy (CAP) and Common Fisheries Policy CFP) Funds, 2014–2020, for the phase on the Programming of Common Strategic Framework Funds. The document specifies an integrated approach in the implementation of environment and climate change policies, and in particular for resource efficiency, proposing specific interventions in the operational programmes for the period 2014–2020. The MoEW has developed the second phase of the guidelines – Implementation of the Partnership Agreement and Programmes in the period 2014–2020[16].

Measures are envisaged for urban wastewater treatment, in particular the construction, rehabilitation or reconstruction of treatment facilities for wastewater treatment plant sludge and the supply of the necessary equipment, including for existing plants (according to the Strategic Plan for Sludge Management from Urban Wastewater Treatment Plants) with priority given to improving quality parameters with a view to their subsequent use for energy purposes[17].

The OPE has been prepared in accordance with the Europe 2020 Strategy for Smart, Sustainable and Inclusive Growth, the Blueprint to Safeguard Europe's Water Resources to 2020, the Resource Efficiency Roadmap, etc., and most of the measures set out in the OPE will contribute to achieving resource efficiency and circular economy objectives.

Actions to be supported under Specific Objective 1: Protection and improvement of water resources status (Priority axis 1, Water), with a concrete contribution to resource efficiency are:

- design/construction/rehabilitation/reconstruction of wastewater treatment plants, including facilities for sludge treatment (in accordance with the requirements of the Directive concerning urban wastewater treatment and the conditions of the discharge permit, including ensuring more stringent treatment with nutrient removal from wastewater for agglomerations of more than 10,000 people discharging into sensitive areas);
- design/construction/rehabilitation/reconstruction or replacement of collecting systems and facilities to or from the wastewater treatment plant in order to provide for environmentally friendly and cost-effective operation of the water supply and sanitation systems in accordance with the country's commitments under the Urban Wastewater Treatment Directive;
- design/construction/rehabilitation/reconstruction of drinking water supply networks and facilities aimed at increasing the efficiency of water use and reducing water losses in water supply networks in accordance with Directive 98/83/EC.

Actions to be supported under Specific Objective 2: Reducing the amount of waste going to landfills (Priority Axis 2, Waste), with a concrete contribution to resource efficiency and circular economy are:

- design and construction of centres for reuse, repair and preparation for reuse, including delivery of facilities and equipment;
- design and construction of installations for preliminary treatment of municipal waste;
- delivery of necessary equipment and facilities, as well as equipment for separate collection of biodegradable and green waste;

[16] http://ope.moew.government.bg/files/useruploads/files/ope_2014-2020_amendment_en_july2017.pdf (English)
[17] http://www.moew.government.bg/static/media/ups/tiny/filebase/Waste/sewage_sludge/Sludge_project_last/NSPSM_BG.pdf (Bulgarian)

- design and construction of anaerobic and/or composting installations for separately collected biodegradable and/or green waste;
- design and construction of installation for waste recovery – the third phase of Sofia Municipality's integrated project for municipal waste treatment facilities;
- design and construction of adjoining infrastructure to the above-listed installations (for example, power supply, road, water supply) serving only the sites/installations;
- implementation of demonstration/pilot projects for collecting, synthesising, disseminating and implementing new, non-traditional successful waste management interventions, good practices and management approaches in the field of waste as well as introduction of novel technologies, and organisation of information campaigns focused on waste prevention and the formation of a zero-waste society.

Resource efficiency and circular economy policy initiatives from subnational to local level

The 265 municipalities in Bulgaria are spread across 55 regional waste management systems sharing common infrastructure for the treatment of municipal waste.

Municipalities must organise systems for the separate collection of household waste paper and cardboard, metals, plastic and glass, as well as ensure the appropriate conditions for separate collection of waste from packaging for all settlements with a population of more than 5,000 inhabitants and for resorts. Municipalities must ensure the availability of sites for free deposition of separately collected household waste, including bulky, hazardous and other forms of waste, in all settlements with a population of more than 10,000 inhabitants and, where necessary, in other settlements.

The users of commercial sites, manufacturing, business and administrative buildings in settlements of more than 5,000 inhabitants and in resorts are required, as of the beginning of 2013, to collect paper and cardboard, glass, plastic and metal wastes separately in compliance with the ordinances of the municipalities under the WMA.

With a role in the administration of Bulgaria's European Structural and Investment Funds (ESIF), the Operational Programme on Innovation and Competitiveness (OPIC)[18] 2014-2020 is managed by the Ministry of Economy and provides financial support to pilot and demonstration initiatives for increasing resource efficiency in enterprises and/or groups of companies. Supported measures include those for improving resource efficiency and the sustainable use of raw materials, including industrial symbiosis, such as the introduction of high-tech and ICT solutions for optimising production processes and reducing the use of raw materials; introducing modern technologies to use waste as a raw material in new production and/or alternative applications; implementation of modern waste-free technology, including replacement of obsolete and resource-intensive equipment; introducing innovative production materials and increasing the use of recyclable materials, including through investments to adapt existing equipment to the characteristics of new products; and introducing water-use rotation in production processes. For better results, there is a requirement for innovation dissemination to promote a multiplier effect and increased capitalisation. The beneficiaries are SMEs in manufacturing.
The OPIC also provides for the introduction of eco-innovation in companies, supporting 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 alternative uses; and the introduction of non-waste technologies, innovative manufacturing materials, and technologies for the production of green products in all other sectors of the economy. The OPIC focus is on eco-innovation that contributes to the rational use of resources and energy and increases the productivity of enterprises.

[18] http://www.opcompetitiveness.bg/images/filerepository/3733_OPIC_2014_2020_adopted_by_EC_16.03.2015_EN.pdf (English)

Other resources

Examples of policies which go beyond "material resources"

The development of systems for assessing and reporting the value of ecosystems and their services in the process of elaborating sectoral policies is an important priority of the resource efficiency policy of Bulgaria (as set out in the National Development Programme Bulgaria 2020). First steps have been taken in this regard. The Biodiversity and Ecosystem Services programme (BG03) under the Financial Mechanism of European Economic Area 2009–2014 has been implemented, resulting in a national methodology framework for mapping and biophysical assessment of ecosystems and ecosystem services in Bulgaria. Guidance on ecosystem monitoring and on-site verification has been prepared, as well as a framework document on economic assessment. Nine types of ecosystems outside Natura 2000 were mapped in Bulgaria: agricultural, grass, bush and ericoid ecosystems, marine ecosystems, rare and no-vegetation areas, rivers and lakes, wetlands, forest and shrub ecosystems, and urban ecosystems. The data and maps will form the basis of policies on the sustainable use of natural resources in line with the requirements of EU legislation.

A water pricing policy is under development to ensure both the adequate contribution of different water users to the recovery of costs and the introduction of appropriate incentives and mechanisms to achieve efficient water use. Economic incentives for rational use of water resources in agriculture are already in place, with farmers paying lower fees if the amount of water used for irrigation is within set norms. Water consumption norms for irrigation are specified on the basis of hydro-meteorological conditions in different parts of the country, the different types of crops, and whether farmers use gravitational, sprinkler or drip systems. This policy contributes to the implementation of SDGs 6, 12 and 13.

The way forward

Reflections on future directions of policies on resource efficiency and circular economy

The main barriers to implementing policies on resource efficiency, circular economy and raw materials relate to the markets – weak price signals due to lack of internalisation of external costs in some commodity markets, non-harmonised incentives for value-chain actors, and lack of information for consumers and investors. Moreover, management and regulatory weaknesses also contribute to the challenges to meeting goals and achieving the desired results. To address the challenges, a comprehensive and consistent approach that takes full account of the interaction and interdependence of elements across the value chain is needed. It should provide synergies between objectives and measures in the waste sector with other more resource-efficient policies covering the different phases of the circular economy model, with the following priority areas:

- promoting the use of economic incentives for eco-innovative and sustainable product design and facilitating the development of more circular models for products and services through a more coherent EU product policy;
- overcoming market failures that prevent the reuse of waste, also taking into account the heterogeneity of the types of materials and their use;
- promoting direct investments in waste management options that are higher in the waste hierarchy (prevention, reuse, recycling);
- supporting eco-innovative SMEs and their access to financial support;
- promoting wider and better choice for consumers by offering innovative business models – hiring, borrowing or sharing as alternatives to owning products, while respecting consumer interests (in terms of cost, protection, information, contractual terms, insurance aspects, etc.), and supporting the provision of the necessary services in this respect to the users (maintenance/repair services, etc.);

- ensuring greater clarity, credibility and relevance of consumer information on product characteristics related to circular patterns of consumption and the protection of consumers against false and misleading information;
- creating markets for high-quality recycled materials (secondary raw materials);
- promoting value-chain cooperation through innovative systematic approaches such as facilitating clustering activities to prevent by-products from becoming waste, industrial symbiosis and cascading resource use. For this purpose, the availability and exchange of reliable and comparable information on material flows is crucial;
- stimulating digital technologies and solutions.

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