



Netherlands Enterprise Agency

# **Holland Circular Hotspot: opportunities in seven Central Eastern European countries Romania**

*Commissioned by the ministry of Infrastructure and the Environment*



# Holland Circular Hotspot: opportunities in seven Central Eastern European countries

Romania

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Ministry of Infrastructure and the  
Environment



Netherlands Enterprise Agency

Compiled by Freek van Eijk & Jamie Patton, Acceleratio



Updated and reviewed by RVO & Dutch Embassy Bucharest in June 2017

**Disclaimer**

This report contains information gathered in the process of organising trade missions on waste management and circular economy matters in 2016. Although it has been gathered with care, it is not and cannot be a full account of the state of development in these areas in the selected country. Rather than discarding the information collected, it has been deemed useful to bundle it, to serve as a first orientation for organisations considering doing business in central and eastern Europe.

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# Introduction

## Holland Circular Hotspot ambitions

We are just starting our journey towards a circular economy (CE): a transition in which the use and reuse of resources takes on central importance; a transition that makes us look differently at the design, manufacturing and usage of products. It is an exciting transition full of welfare enhancing possibilities, and the world looks to The Netherlands for leadership.

In the first half of 2016, while the Dutch held the Presidency of the European Union, The Netherlands presented itself as a “circular hotspot” and “living lab” to the world; Amsterdam was voted European Capital of Innovation. Our government-wide ambition is to have a full CE in The Netherlands by 2050. Economic growth will rise in parallel with sustainable gains. The Netherlands, with its dense population and water management challenges, has historically been built on a foundation of collaboration and innovation. As such, the country has prided itself on smart resource management. Nowadays, The Netherlands is a global water management hub, the second highest dairy food exporter in the world – and among the world’s leaders in waste management.

The most important lesson Dutch organisations have learned, to date, is that a CE is first and foremost an economy where working together is the key to success. Businesses, governments, municipalities, universities, research institutes and NGOs all need to find ways to cooperate more intensely – with more focus – than they have ever done before.

With Holland Circular Hotspot<sup>1</sup> (HCH) we combine forces. We demonstrate and extend our leading CE position internationally, to inspire others to create their own Hotspots, accelerated by Dutch ingenuity.

HCH focuses on companies and knowledge institutions in the waste and recycling sector that have an interest in expanding internationally (“often the first step in a circular economy”), as well as those that focus on the CE transition by engaging with other parts of the value-chain.

HCH’s role will be to stimulate international ambition and to match it with Dutch knowledge and expertise. The Hotspot will promote the visibility of the CE transition, and Dutch efforts to accelerate it. We combine and extend existing networks and platforms for CE, waste management and recycling, with a particular drive to collaboratively explore new international opportunities.

Participation in HCH is open to businesses, educational institutions, NGOs and governments, provided they contribute to the further development and operation of the platform.

Initiating parties are part of the so-called golden triangle: companies, knowledge institutions and government. Participants include ENVAQUA, representatives of the associations of the waste and recycling sector (VA, BRBS, NVRD), VNO-NCW, Netherlands Circular Hotspot, Circle Economy, INSID, Delta Development Group, MVO Netherlands – as well as representatives of knowledge institutes, provinces, municipalities, the governmental agencies RWS and RVO, and representatives of the Ministries Infrastructure and the Environment, Economic Affairs and Foreign Affairs.

For more information on HCH contact Herman Bavinck or Tjitske Ijpma:

E: [Herman.Bavinck@minienm.nl](mailto:Herman.Bavinck@minienm.nl)

T: +31 6 520 96 852

E: [Tjitske.Ijpma@minienm.nl](mailto:Tjitske.Ijpma@minienm.nl)

T: +31 6 527 40 197

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<sup>1</sup> <https://www.rijksoverheid.nl/actueel/nieuws/2016/11/09/bedrijven-gaan-grens-over-met-innovaties-recycle-economie>

## Specific missions and objectives

HCH took its first concrete action in November 2016 – a fact-finding mission to Bulgaria and Romania. These countries have the furthest to travel to comply with European standards. But the challenge is met with ambition: in the coming years, with the support of European funds, they will pursue swift progress – above all, in waste management infrastructure. There is great interest in Dutch technology and expertise, offering mutual business opportunities. More broadly, the ambition in the Central and Eastern European region offers opportunities in fields where the circular economy transition is most urgent: agro-food, bio-based economy, logistics, energy transition and, indeed, smart & sustainable cities. Bulgaria wants to make CE a priority issue during its EU presidency in 2018, as does Romania in 2019. HCH will seek to leverage this enthusiasm from the beginning.

The delegation travelled to the region between November 8 and 11, 2016. In the company of, among others, Bart van Bolhuis, International Director for the Ministry of Infrastructure and the Environment, it explored opportunities to do business – as well as for Government2Government (“G2G”) and Knowledge2Knowledge (“K2K”) collaboration.

Follow-up actions and missions – both inbound and outbound – are being organised for the year 2017. Building on opportunities and learnings from Bulgaria and Romania, the net will be cast wider, to include Poland, Hungary, Slovakia, Croatia and Slovenia.

## Eastern Europe: overview

### Waste management

Central and Eastern European countries (so-called “CEEs”) are at different stages in the development of their waste management infrastructure; broadly speaking, their journeys are just beginning. Some start more or less from scratch. As Member States (MS) they are obliged to adopt the CE Package; implementation is the challenge, particularly given – in some cases – resistance from local stakeholders.

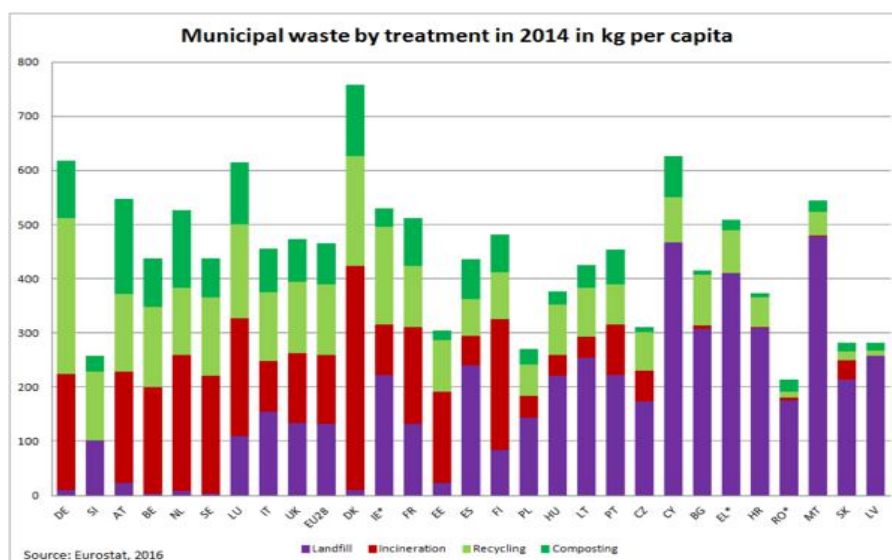


Figure 1: MSW treatment in Europe, 2014

There is a perception that CEEs had little involvement in policies created by Brussels – and that the corresponding waste management legislation betrayed too heavy a focus on top performing MS. A counter-argument holds that CEE governments have not been as active as they might have, in making waste management a top priority – and channelling resources and attention accordingly. Whatever perspective, eastern European actors throughout the value chain (including public sector departments) will really have to make an effort, if they are to hit the targets their governments have set and release the benefits of a CE. European structural funds offer financing support, but this can only be unlocked once certain advancements have been achieved, and needs to be complemented by technology and expertise.

While the state of waste management is in general below EU averages, most CEEs have made a start in catching up with EU waste legislation. Countries like Romania are an exception, where landfill diversion measures still haven't made it past parliament (status December 2016). Enforcement typically lags behind. Occasionally end-of-waste declarations (“technological construction material”) are made, unchallenged, for large quantities of waste landfilled – to avoid paying charges to the local community or a landfill fee.

Problems have also arisen due to less adequate planning and project discipline.

In order to be successful, efforts to develop CEE waste management infrastructure will need to have regard to the economic disparities that exist, both between the CEEs and within them. There is a natural Government2Government angle in cases like this, but also a role for knowledge institutions and companies. How can fees for MSW services that aim to divert from landfilling, for example, be designed to fit with average monthly incomes? In meeting challenges like this, the Dutch have experience and knowledge to share and good stories to tell.

Refuse Derived Fuel (RDF) imports are a pressing issue in some countries. RDF is exported from MS with high landfill fees (or bans) to CEEs, for whom import is cheaper than local production. Little or no



domestic capacity exists because it's too difficult to compete with low landfill prices. Of the RDF that is produced, much is too poor quality to be used by cement manufacturers. New strategies are needed.<sup>2</sup>

Landfill fees are another problematic issue. Municipalities – often co-owners that charge by the ton – oppose them, as raising fees is unpopular with local constituencies. Resistance to change is also felt from multi-national private waste management companies, the first investors in CEEs after the collapse of the Soviet Union.<sup>3</sup> These companies tend to operate large numbers of landfills, and hold a tight grip on local waste markets.

## Other circular economy dimensions

So far, a lot of attention has been going to waste management. This is a very good and essential first step towards a transition towards the Circular Economy but only part of the story. Action will be needed in the whole value chain, covering material sourcing, the production, consumption and waste phase, as illustrated in the Dutch transition from a linear economy to an economy with recycling to a circular economy.

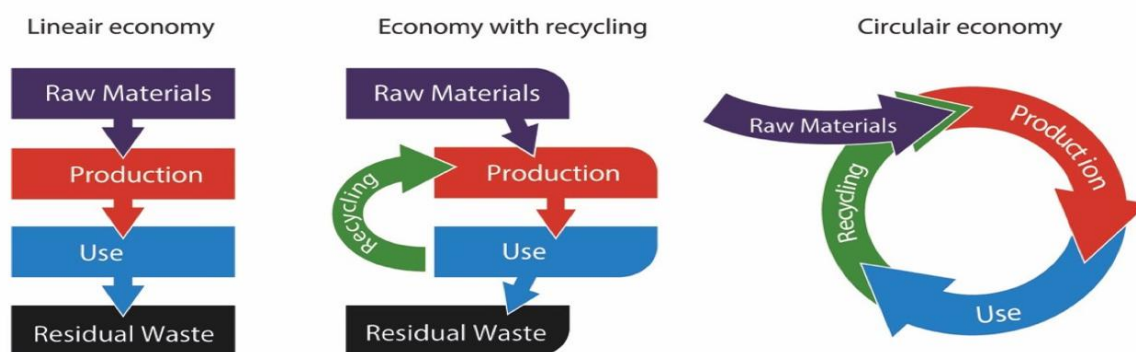


Figure 2: Transition from a Linear to a Circular Economy

Broader CE challenges are a magnified reflection of the waste management challenges above. With the weight of the EU behind it, there is official enthusiasm for the CE Package<sup>4</sup> and glimpses of private sector initiative. However, CEE countries lack not only the infrastructure but the awareness and technology learning that their western counterparts have built up over time. Catching up is a tall order.

Governments are very interested in expertise and experience from other countries. These governments are open to creating open G2G, K2K and B2B channels with international expertise. G2G actions typically create the conditions for future business opportunities.

EU presidencies (Slovakia 2016; Bulgaria 2018; Romania 2019) are acting as a helpful catalyst, turning lofty ambitions into concrete actions.

<sup>2</sup> Notably, in Slovenia, the opposite is the case. Its largest waste processing facility produces RDF with similar calorific value to brown coal. Currently, given aversion to incineration, this is not burned. There is an opportunity to export it – to The Netherlands.

<sup>3</sup> Peter Hodecek & Christian Abl, "Dynamic Potential of a Circular Economy," Presentation to FEAD Biennial Conference, London, 23 June 2015, slide 15

<sup>4</sup> [http://europa.eu/rapid/press-release\\_IP-15-6203\\_en.htm](http://europa.eu/rapid/press-release_IP-15-6203_en.htm)

Most importantly, funding is available for the CEE region to accelerate its CE transition. Funding programmes reflect a broad range of priorities, going beyond basic waste management – although that is a significant priority – towards topics like resource efficiency, renewable energy, wastewater management and sustainable building. Some of these topics are steered by climate actions as well, or linked with UN SDG (Sustainable Development Goals). Combining CE actions with ongoing efforts in these fields can be effective. Governments will be keen to leverage the learnings of others to ensure that those investments have maximum impact.

### Most interesting opportunities

Against this backdrop, there are evident opportunities for Dutch businesses, as well as for G2G and K2K exchanges. Some of the most fertile topics have been highlighted in the report, in the country-specific profiles. These came sharper into focus during the first trade mission – to Romania and Bulgaria – and no doubt will continue to emerge during upcoming missions and follow-up interactions.

At a high level, the most interesting opportunities appear to fall in these areas:

- **Bio-energy** (Romania, Bulgaria, Slovakia, Hungary, Poland, Slovenia)
- **MSW separate collection and treatment** (Romania, Bulgaria, Slovakia, Hungary, Poland)
- **Recycling and waste prevention** (Romania, Hungary)
- **Soil and groundwater remediation** (Romania, Hungary, Slovenia, Croatia)
- **Water treatment and re-use** (Poland)
- **Extended Producer Responsibility** (Romania, Bulgaria, Slovakia)
- **RDF production** (Romania, Slovakia, Poland)
- **Green public transport** (Slovenia)
  
- A wild card can be given to **remanufacturing** combining a manufacturing tradition, skills and low wages with a central European position and the additional advantage that it is not regulatory driven

Other topics like water management and agro-food solutions are already being explored.

Romania and Bulgaria to take the biggest steps, starting with the design, implementation and operation of integrated waste management systems. Romania's capital Bucharest is starting to develop, but Romania has a long way to go in rolling this out across its 41 counties. Dutch government – national and local – has valuable expertise to share in waste management but also in relation to wider CE actions such as green public procurement (GPP) or eco-design.

### (Consultancy) opportunities according to the European Bank of Reconstruction and Development (EBRD)

The EBRD fosters transition to market economies in countries from Central and Eastern Europe to Central Asia and the Southern and Eastern Mediterranean region. On May 3, 2017 they organised a seminar in The Hague on merging opportunities for consultants in the CEE area amongst other aimed the transition to low-carbon and climate resilient economies.

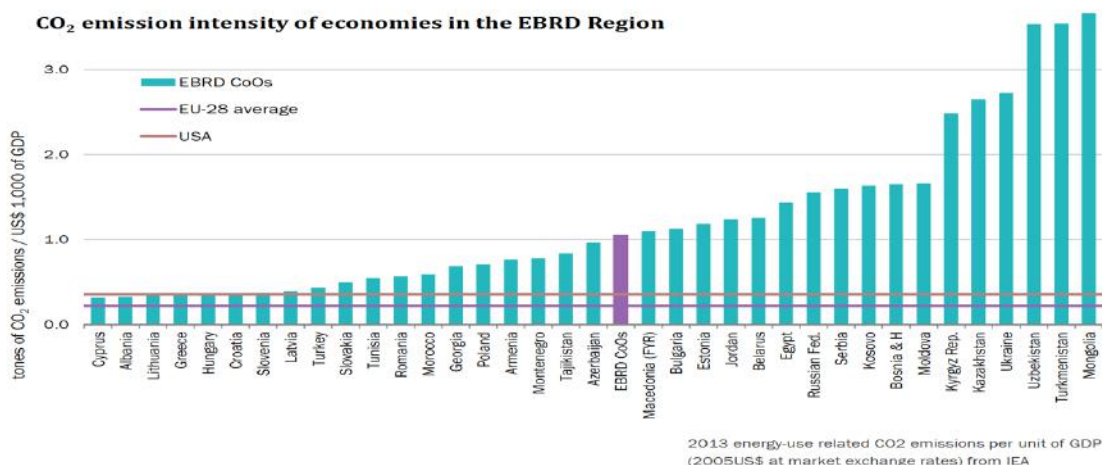


Figure 3: Carbon Intensity of Economies in the EBRD Region

### International context strengthening the case for a Circular Economy approach

The EBRD mentioned several factors why a green and circular economy transition is more than likely:

- COP21 Paris : universal and ambitious agreement to limit the increase in global average temperatures to +2°C; also, “to pursue efforts” to limit to 1.5°C
- The Sustainable Development Goals, adopted in 2015, provided increased focus on environmental sustainability
- G7 Summit Leader’s Declaration in June 2015: MDBs need to maximise their balance sheets in delivering climate finance and helping countries transition to low carbon economies

EBRD is at the forefront of efforts to channel resources from existing and emerging global climate finance funds to projects on the ground.

### EBRD transition context

The EBRD has a special mandate to foster transition to market economies – this implies that resources are used efficiently; EBRD focus is placed at the crossroad between sustainability and market development and private sector support. There is a legacy that big enterprises and utilities having developed that are not reflective of costs and environmental externalities. Several EBRD economies display some of the highest energy and carbon emissions intensity levels in the world. It is also imperative to increase energy security.

### EBRD focus areas since 2006

The focus of the EBRD since 2006 has been on the Sustainable Energy Initiative covering Energy Efficiency and Renewable Energy. In 2013, a focus on Sustainable Resources was added with a.o. water efficiency, material efficiency and adaptation to Climate Change. Since 2015 a transition to a green economy has come on top of the two earlier mentioned activities. The green Economy Initiative comprises on Environmental protection and Technology Transfer.

A green economy is a market economy where investments are made taking account of their environmental impact and with concern for the sustainable use of natural resources.

## Examples of Consultancy Service needs

Green economy projects, or project components, fall in the following areas:

- Energy efficiency
- Renewable energy
- Water efficiency
- Resilience to climate change
- Waste minimisation and materials efficiency
- Pollution control and environmental compliance

Examples of Consultancy Services in the EBRD Sector Municipal & Environmental Infrastructure

- Technical studies
- Market studies
- Feasibility study
- Technical, financial & environmental/social due diligence
- Environmental and Social Impact Assessments (ESIA)
- Lender's monitor/engineer
- Project implementation support
- Stakeholder participation programme
- Corporate, financial and operational performance improvement programmes
- Capacity building and training

Green economy projects, or project components under the scope of Green Economy Transition, falling in the following segments

- Water
- Wastewater
- District heating
- Solid waste
- Busses/trams
- Metro
- Ferries
- Parking
- Urban roads
- e-ticketing
- Traffic management
- Street lighting
- Tariffs
- Regulators

Examples of Consultancy Services in the EBRD Sector: Green Economy Transition

- Technical studies
- Market studies for new technologies
- Feasibility studies
- Technical, financial & environmental/social due diligence
- Energy audits
- Resource audits
- Project implementation support (e.g. advice to local banks on how to on-lend to local clients)
- Policy dialogue to address environmental market failures, strengthen the institutional or regulatory context
- Climate change action plans
- Tariff methodology advice

- Corporate policies
- Renewable energy
- Resource efficiency (water, materials)
- EBRD sustainable energy & resource finance facilities (SEFFs)
- (Residential) buildings
- Industrial & corporate sector
- Technology transfer
- Energy Service Companies (ESCOs)
- Recycling

Examples of required non-transactional consultancy services or for EBRD's institutional needs

- Policy dialogue and reform in all sectors
- Legal reform (access to finance, corporate governance, public procurement, PPP etc.)
- Capital market development
- Environmental studies
- Gender & social assessments
- Capacity building / training
- Institution building
- Economic studies
- Political analysis
- Research
- Legal advice on investments (outside counsel)
- Evaluation
- IT design and implementation

## Existing support programmes

The Netherlands Enterprise Agency, [RVO](#), encourages entrepreneurs in sustainable, innovative and international business. It helps with grants, finding business partners, know-how and compliance with laws and regulations.

The aim is to improve opportunities for entrepreneurs and strengthen their position. The Agency works at the instigation of ministries and the EU. RVO is part of the Ministry of Economic Affairs.

RVO focuses on providing services to entrepreneurs. It aims to make it easier to do business using smart organisation and digital communication. The Agency works in The Netherlands and abroad with governments, knowledge centres, international organisations and countless other partners.

RVO organises international cooperation under the flag of G2G and K2K programmes.

The Ministry of Foreign Affairs will create favourable conditions for doing business with countries that are interesting for Dutch entrepreneurs. Some markets might be commercially interesting, but still not accessible enough. International cooperation can make a difference.

## Knowledge exchange

In G2G- and K2K projects exchange Dutch government organisations and research institutes exchange knowledge with their foreign counterparts. This creates a comprehensive network that supports the Dutch business community doing business internationally. G2G projects, especially, create the conditions that allow for future business, for example by cultivating a favourable regulatory environment.

## Sustainable economic development

The Ministry of Foreign Affairs develops projects that contribute to achieving sustainable economic development in various (developing) countries. Sustainable growth and economic independence start with the promotion of a good business climate. These are the conditions under which the local private sector in developing countries, as an engine of growth and employment, can function. The Netherlands has a lot of knowledge on core issues such as environment, energy, food and water that are useful in these projects.

### Creating favourable conditions for doing business

The success of a Dutch business abroad depends on more than courage, a good network and a business plan. Some markets are commercially interesting, but still not accessible enough. This is something that can be enhanced by collaboration.

RVO organises and coordinates numerous G2G and K2K projects. The aim is to create favourable conditions for doing business with countries that are interesting for Dutch entrepreneurs. These projects facilitate exchange of Dutch knowledge – from government organisations and research institutes – with knowledge held by foreign counterparts. They work together to solve problems for business and an extensive network of Dutch knowledge institutions, businesses and governments.

### Starters in International Business ([www.rvo.nl/sib](http://www.rvo.nl/sib))

Coaching vouchers are available for SME's with limited experience in international business that want to start to export. For a period of (on average) 4 months you and your coach can investigate opportunities and identify risks abroad.

### Mission vouchers

Mission Vouchers are available for participation on trade missions or exhibitions up to 50% of the costs with a maximum of € 1.500 (excluding VAT). The travel and staying costs will have to be paid individually.

### Knowledge vouchers

Do you want to establish or enhance your company's position on a foreign market, but you need fiscal or legal support to do so? A knowledge voucher will help you cover the cost of hiring an international lawyer or tax consultant.

### The business partner scan

The business partner scan involves drawing up a list of active contacts for a company for a specific country. A list of active contacts are provided and a mission employee conducts an introduction to the foreign parties on behalf of the Dutch entrepreneur.

### Subsidy for demonstration projects, feasibility studies and studies aimed at the preparation of investments (DHI) ([www.rvo.nl/dhi](http://www.rvo.nl/dhi))

The subsidy for demonstration projects, feasibility studies and studies aimed at the preparation of investments (DHI) is meant for entrepreneurs that want to carry out projects abroad, invest in a company or convince local counterparts of their technology.

With this instrument the Ministry of Foreign Affairs hopes that more Dutch companies will be successful in doing business in upcoming markets and developing countries.

This "DHI" arrangement consists of a tender programme with tender rounds on average lasting 6 weeks. Entrepreneurs can apply only during a tender round. The second tender round of 2017 opens on Augustus 8, 2017 and closes on September 19, 2017 at 15.00 uur CET.

### SME Instruments

The SME Instrument supports market-creating innovation in small and medium-sized businesses (SMEs) with significant growth potential and global ambitions. As part of Horizon 2020 – the EU’s €80 billion Research and Innovation funding programme – it will invest €3 billion in 7,500 companies until 2020.

The instrument consists of 3 phases.

- Phase 1: Concept & Feasibility Assessment, from idea to concept (6 months). SME’s will receive a lump sum of €50 000 in funding to carry out a feasibility study to verify the viability of the proposed disruptive innovation or concept. In this phase the SME will draft an initial business proposal (around 10 pages).
- Phase 2: Demonstration, Market Replication, R&D, Concept to Market-Maturity (1-2 years). In this phase the SME will further develop its proposal through innovation activities, such as demonstration, testing, piloting, scaling up, and miniaturisation. It will also draft a more developed business plan (around 30 pages). The funding is 70% of the eligible costs, up until €2.5 million .
- Phase 3. Commercialisation, Prepare for Market Launch. SMEs will receive extensive support, training, mentorship and facilitating access to risk finance as the project is further polished into a marketable product.

Contact: Elke van de Graaf (E: [elke.vandegraaf@rvo.nl](mailto:elke.vandegraaf@rvo.nl), M: +31 6 50447467 T: +31 (0)88 6025193.

#### Partners for International Business (PIB)

The Dutch government has a programme for businesses that want to develop a certain market in a certain geographical area but encounter barriers or lack intelligence or access to decision makers. The Partners for International Business (PIB) programme aims, for a cluster of companies and knowledge institutes (Min. 5) and with the assistance of the government, to promote Dutch capabilities in promising international markets. Together with the RVO a 2 or 3-year business programme will be established, with activities that include:

- Promotion and matchmaking<sup>5</sup>
- Knowledge exchange and networking<sup>6</sup>
- Economic diplomacy<sup>7</sup>

The government will make use of its extensive [foreign network](#)<sup>8</sup> with embassies, consulates and NBSO’s. Since 2012 [more than 70 programmes](#)<sup>9</sup> have started (for example: water management projects are abundant in Eastern Europe). The PIB programme is available for a [large number of countries](#).<sup>10</sup> To be accepted for the PIB programme your cluster must fulfil a [number of criteria](#).<sup>11</sup> The overall annual PIB budget is €8 million. The basis for collaboration with PIB participants is a similar contribution (financial and in kind, for example hours committed by cluster participants). The maximum public contribution for an individual PIB is €350.000. A PIB is not a subsidy and as such not directly available or spendable by the cluster participants. To qualify for a PIB you will have to go through [a number of steps](#).<sup>12</sup>

#### Mission support

RVO can also facilitate incoming missions for “influentials” and support Fact-finding missions or Innovation missions. Contact for further information: [teamiris@rvo.nl](mailto:teamiris@rvo.nl)

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<sup>5</sup> <http://www.rvo.nl/subsidies-regelingen/partners-international-business/promotie-en-matchmaking>

<sup>6</sup> <http://www.rvo.nl/subsidies-regelingen/partners-international-business/kennisuitwisseling-en-netwerken>

<sup>7</sup> <http://www.rvo.nl/subsidies-regelingen/partners-international-business/economische-diplomatie>

<sup>8</sup> <http://www.rvo.nl/onderwerpen/internationaal-ondernemen/wegwijzer-internationaal-zakendoen/buitenlandnetwerk>

<sup>9</sup> <http://www.rvo.nl/subsidies-regelingen/projecten?f%5B0%5D=subsidies%3A3993>

<sup>10</sup> <http://www.rvo.nl/subsidies-regelingen/partners-international-business/landen>

<sup>11</sup> <http://www.rvo.nl/subsidies-regelingen/partners-for-international-business/kom-ik-in-aanmerking>

<sup>12</sup> <http://www.rvo.nl/subsidies-regelingen/partners-international-business/aanvraaginformatie>



## Financing

RVO can also offer support and advice for several programmes that provide financing support. Below readers will find links from a RVO presentation given on 3 October 2016. For more information on these and other programmes that exist, please visit [www.rvo.nl](http://www.rvo.nl) (Dutch).

## Research and innovation programmes

- **Horizon2020**<sup>13</sup> is the biggest EU Research and Innovation programme ever, with nearly €80 billion of funding available over 7 years (2014 to 2020) – not including the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market. A .pdf-presentation can be found [here](#).<sup>14</sup> Contact persons for Societal Challenge 5; Climate Action, Environment, Resource Efficiency and Raw Materials (including Circular Economy topics): [John.Heynen@rvo.nl](mailto:John.Heynen@rvo.nl); [Corinne.vanvoorden@rvo.nl](mailto:Corinne.vanvoorden@rvo.nl);
- **Life**<sup>15</sup> is the EU's financial instrument supporting environmental, nature conservation and climate action projects. Since 1992, LIFE has co-financed 4306 projects. For the 2014-2020 funding period, LIFE will contribute approximately €3.4 billion to the protection of the environment and climate. A .pdf-presentation can be found [here](#).<sup>16</sup> Contact person: [John.Heynen@rvo.nl](mailto:John.Heynen@rvo.nl)
- **Eurostars**<sup>17</sup> supports international innovative projects led by R&D- performing small- and medium-sized enterprises. It is an ideal first step in international cooperation, enabling small businesses to combine and share expertise and benefit from working beyond national borders. Eurostars is a joint programme between EUREKA and the European Commission, co-funded from the national budgets of 36 Eurostars Participating States and Partner Countries and by the European Union through Horizon 2020. In the 2014-2020 period, it has a total public budget of €1.14 billion. Contact person: [arnold.meijer@rvo.nl](mailto:arnold.meijer@rvo.nl)
- The **Enterprise Europe Network**<sup>18</sup> is the world's largest support network for small and medium sized businesses (SMEs) with international ambitions. It has 3,000 experts across 600 member organisations in more than 60 countries. Member organisations include chambers of commerce and industry, technology centres, and research institutes. The Network helps ambitious SMEs innovate and grow internationally. It provides international business expertise with local knowledge across a range of targeted services: partnership, advisory and innovation support. The Network also offers specialised industry expertise across 17 sectors. Contact person: [Janine.Kaya@rvo.nl](mailto:Janine.Kaya@rvo.nl)
- More information on CE financing possibilities for SMEs can be found [here](#).<sup>19</sup>

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<sup>13</sup> <http://www.rvo.nl/subsidies-regelingen/horizon-2020>

<sup>14</sup> <http://www.rvo.nl/sites/default/files/2016/10/Circulaire%20economie%20Horizon%202020.pdf>

<sup>15</sup> <http://www.rvo.nl/subsidies-regelingen/life>

<sup>16</sup> <http://www.rvo.nl/sites/default/files/2016/10/Circulaire%20economie%20LIFE.pdf>

<sup>17</sup> <http://www.rvo.nl/subsidies-regelingen/eurostars-%E2%80%93-subsidie-internationale-marktgerichte-rd>

<sup>18</sup> <http://www.rvo.nl/onderwerpen/innovatief-ondernemen/research--development/enterprise-europe-network>

<sup>19</sup> <http://www.rvo.nl/sites/default/files/2016/10/Circulaire%20economie%20en%20financieringsmogelijkheden%20voor%20MKB.pdf>



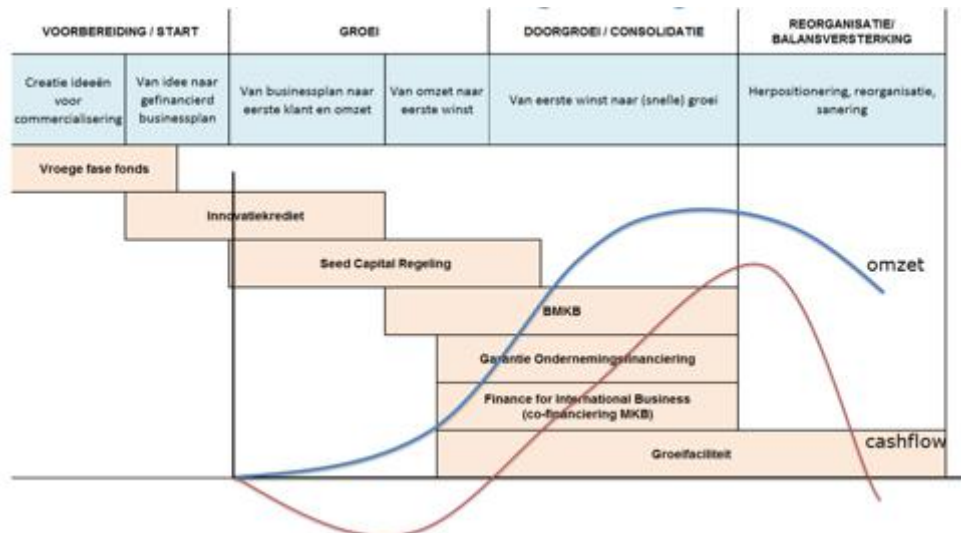


Figure 4: CE financing possibilities for Dutch SMEs

- Although not a financing programme *per se*, [NederlandCirculair!](http://www.circulairondernemen.nl/)<sup>20</sup> is a very useful online community. It stimulates people and organisations to do circular business and to produce, consume, finance and organise more innovatively. Besides community building, useful tools and practical activities are offered that help the entrepreneurs to become more circular. Nederland circulair! is supported by the Ministry of Infrastructure and Environment and carried out by MVO Nederland, Circle Economy, De Groene Zaak, ClickNL Design, Het Groene Brein, Sustainable Finance Lab and RVO, in collaboration with a large number of other organisations like TNO, Acceleratio and ICE Amsterdam. A presentation on NederlandCirculair! activities can be found [here](http://www.rvo.nl/sites/default/files/2016/10/NL_Circulair_Basispresentatie.pptx).<sup>21</sup> Contact person: [Herman.Bavinck@minienm.nl](mailto:Herman.Bavinck@minienm.nl)

[The Netherlands Circular Hotspot](http://www.netherlands-circular-hotspot.nl/)<sup>22</sup> campaign site provides useful information as well, including on a wealth of circular best practices. Positioning The Netherlands as a circular hotspot is an ambition that will inspire and connect Dutch actors with each other and with the rest of the world. The Netherlands is spearheading the CE movement and has become a “living lab” that provides the rest of the world with examples to learn from. Being a frontrunner in the CE will create benefits for the Dutch economy and society as a whole. The campaign is particularly urgent and timely, promoting Dutch capabilities during the Dutch presidency of the EU in 2

<sup>20</sup> <http://www.circulairondernemen.nl/>

<sup>21</sup> [http://www.rvo.nl/sites/default/files/2016/10/NL\\_Circulair\\_Basispresentatie.pptx](http://www.rvo.nl/sites/default/files/2016/10/NL_Circulair_Basispresentatie.pptx)

<sup>22</sup> <http://www.netherlands-circular-hotspot.nl/home.html>

# Country profiles

## Romania

### Opportunities snapshot

<b>State of play</b>	Romania has 20 million inhabitants but an economy one fifth the size of Holland's. Social inequality is high; per capita GDP is the lowest in the EU. Growth is mainly consumption-driven, with low structural investment. Despite the opening of EU borders that has caused a 'brain drain,' Romania certainly has options to promote itself as the "the China of Europe": a low wage/high skill 'near shoring' haven. The Dutch are among the main foreign investors that have got in early. Political instability remains a problem, however. Romania will assume the EU Presidency in 2019, and is expected to table circular economy. Meantime, it struggles to reconcile ambitions with realities: there is an eager private sector but the public sector lacks competence and continuity. Power is decentralised: mayors can hold more sway than ministers; and this can translate into municipal obstructiveness in regulation implementation.
<b>Priority topics</b>	<ul style="list-style-type: none"> <li>- Awareness raising for <b>separate waste collection &amp; recycling</b> (~€7 million)</li> <li>- <b>Recycling</b> and <b>waste prevention</b> systems and activities (~€23 million)</li> <li>- <b>Heating</b> systems using <b>renewable energy</b>, esp. <b>biomass</b> (~€20 million)</li> <li>- <b>Building</b> with <b>ecological materials</b> (~€10 million)</li> </ul>
<b>Catalysts</b>	<ul style="list-style-type: none"> <li>- <b>EU pressure</b> and <b>funding options</b> for a.o., waste management</li> <li>- The momentum of the Romanian <b>EU Presidency</b> in 2019</li> <li>- An <b>eager, educated private sector</b> with language skills and relatively low wages</li> <li>- <b>Iasi</b> recently declared its ambition to join the <b>Zero Waste Network</b></li> </ul>
<b>Waste management: outlook and opportunities</b>	<p>EU waste legislation is yet to be fully implemented (EU funds are underutilised). End of 2016 there was hardly separate MSW collection was minimal and landfill tax absent (landfilling rates are among the highest in the EU). EPR systems are picking up. Municipalities, EPR schemes and the informal sector have overlapping duties and/or ambitions (so they compete instead of collaborating). Local partnering is advised for foreign investors.</p> <ul style="list-style-type: none"> <li>- <b>Design/implementation of integrated regional</b> systems: awareness raising; municipal collection; EPR roll out; end-to-end recycling (investors need to be patient as the system and acceptance of the system have not yet fully matured)</li> <li>- <b>Technology</b> for upcoming tenders: <b>organic</b>; <b>EPR</b> sorting (should move quickly given fining risks are a live issue). AT/DE companies have dominated to date.</li> </ul>
<b>Other circular economy initiatives: outlook and opportunities</b>	<p>Government-driven CE advances beyond waste management and biomass cogeneration may come slowly. Despite growing awareness, economy and environment are seen as competing priorities (and priority goes to the former).</p> <ul style="list-style-type: none"> <li>- The 'China of Europe' angle points to <b>remanufacturing</b> and <b>refurbishment</b>. Applications in the strong <b>automotive</b> sector might be worth further research.</li> <li>- Policymakers are pushing <b>GPP</b> and <b>eco-design</b></li> <li>- <b>Agro-food</b> activities could leverage existing collaboration (SNN) in the northeast</li> <li>- <b>Biomass cogeneration</b> topics were explored during the March 2017 mission</li> </ul>
<b>Follow-up priorities – summary</b>	<p><b>G2G:</b> support Presidency preparations, Waste Management Plan (WMP) implementation and <b>capacity building</b> efforts; facilitate <b>public-private dialogue</b> and <b>inbound missions</b> to The Netherlands</p> <p><b>K2K:</b> catalogue/explore <b>tenders</b> and <b>H2020</b> opportunities, with science institutes</p> <p><b>B2B:</b> explore <b>refurbishment</b> and <b>remanufacturing</b> opportunities, explore <b>waste management tenders</b> once WMP is in place; <b>target large, active cities</b> first</p>

## Market overview

### General state of play

Real GDP growth is ~5% but fragile, driven mainly by consumption rather than structural investment. Productivity growth, accordingly, is weak. The Netherlands is one of the largest investors in the country (although some of this capital is just routed through Dutch branches for tax reasons). Companies with notable presence include ING, Nationale Nederlanden, Philips, Damen Shipyards and Heineken. Several transport companies are very active too.

[Romania](#) is predictably unpredictable, with a relatively high political instability. Socio-economic indicators reveal that inequality levels are among the worst in Europe. Per capita GDP, along with southern neighbour Bulgaria, is the lowest in the EU (~40% of the EU-28 average). 25% of the population live below the poverty line.

Romania aspires to join the Eurozone in the coming ten years, but first has resolved to improve competitiveness. A target of bringing per capita GDP up to 60% of the EU-28 average has been set.

December 2016 elections were easily won by left-leaning social democrats. The victory came a year after a major anti-corruption drive forced the last socialist prime minister from office.

There is huge disparity between the effectiveness of the public and private sectors. The latter is agile and moves at double the speed. There is no tradition of public-private (and scarcely even public-public) cooperation.

Some sectors are legislation and subsidy dependant: particularly for capital investments in plants, and transport approvals. Over-complicated legislation is a significant issue for the agriculture, water and waste sectors. Paradoxically, there is high dependency on EU funds – which come with extra checks and balances – yet, at the same time, very low uptake.

Continuity at the Ministries is a concern. Passing national regulations does not necessarily translate into local implementation. City mayors in many cases are more influential than Ministers, and some municipalities are not always cooperative.

Academic attainment in Romania is strong. Despite the recent ‘brain drain’ that followed the opening of the borders, Romania still has ambitious, highly skilled people. ICT and language skills are in particularly abundant supply. These capabilities, combined with relatively low wages and access to fast internet, make Romania a favourite for ‘near shoring’ (call centres, back office operations, HR, pay services, etc.).

Legacy manufacturing skills are being used in the automotive sector (e.g., Dacia, Mercedes, Pirelli and wind shield manufacturers). Romania likes to position itself as “the China of Europe”. This self-perception creates fertile ground for the uptake of CE concepts like refurbishment and remanufacturing – an opportunity particularly attractive given the low level of public investment required.

Agriculture is strong, although Dutch knowledge transfer could make substantial productivity inroads: Romania’s population of 20 million produces food for 20 million; The Netherlands 17 million-strong population produces enough food to feed 92 million people. Romania grows, among other things, pig feed to meet growing Chinese demand.

The productivity improvements that have been made have not been well shared. In the private sector, wages have been rising slightly, but not in line with productivity. Added value is a key focus. Skills are needed to maintain productivity growth, and to continue to attract investment. Romania recognises the need to complement this with investment in education and health.

### Waste management: market

EU waste legislation still has to be fully implemented. Landfilling rates are among the highest in the EU. Infringement procedures are in progress, for:

- Non-compliant landfills
- Gaps in the transposition of EC legislation (e.g., packaging waste, ELV)

- Severe pollution in the decanting ponds of an old mining site

Huge investment is needed to bring old waste management infrastructure into compliance with EU legislation: €30 to €50 million in each of Romania's 41 counties (not including the capital, Bucharest, a city of 2 million that's only recently starting to implement an integral system for separate collection). Further separate collecting, sorting and organic waste processing, complemented MBT and EfW capabilities, are urgently needed.

There is no separate collection of MSW or landfill tax in place. For the most part, sanitation companies collect waste and bring it directly to landfills. Dumping alternatives – such as recycling and valorisation – are more expensive and politically unpopular to promote at the local level; cost increases for citizens or companies are fiercely resisted. This underlies the current MSW recycling rate of 14%.

Despite EU pressure, implementing a landfill tax is still delayed, allegedly due to insufficient preparedness at the level of municipalities. A reduction in the currently proposed figure (€17/tonne) may be necessary, to get it over the line.

The recycling market still has to develop. Lack of sufficient recyclables on the market means that producers do not see a huge incentive to use secondary raw materials instead of primary.

EPR systems have been rolled out for a.o., ELV, WEEE, batteries and packaging. The regime is not functioning well, however – Heineken received heavy fines despite working with Government-approved partners for packaging collection. System checks and balances are weak. There are also issues with the (large) informal sector, reportedly stealing (systematically) from EPR bins and selling mono-flows to private environmental stations.

Municipalities, EPR schemes and the informal sector have overlapping duties and/or ambitions; and as such, have a tendency to compete instead of collaborating.

Most tenders, to date, have been won by Austrian and German companies (Dutch companies might have been sleeping). Not only have they won technology supply contracts; many municipalities have also insisted that they enter facility management contracts too.

RDF imports from Italy and the UK are entering the Romanian market. Low transport costs (under €20 per tonne from Italy; €20-25 per tonne from the UK) and no local RDF production capacity combine to give MSW another reason to go directly to landfills (again, this is aggravated by the fact that Romania has no landfill tax). Recent reports suggest that imports are increasingly coming from the Balkans, Greece and Hungary too.

Ministerial data either has gaps or is of questionable reliability. There is a risk of double counting, given different data flows from ERP, the informal sector and municipalities. Weak controls combined with understaffing and a lack of training also present a significant challenge.

## Waste management: legislation & planning

Romania's 2020 landfill diversion target for biodegradable municipal waste is 35%.

The EU has financed 32 regional integrated waste management system projects in Romania,. These projects are typically in the range of €30-40 million, with 70% funded by the EU.

The country's [Law no. 211/2011](#)<sup>23</sup> on Waste Management is the primary legislative instrument of interest.

Romania's **National Strategy on Waste Management: 2014-2020** targets:

- Waste prevention and reuse for more efficient use of resources
- Development and expansion of systems for segregated collection of waste
- Development / implementation of technologies and recycling and / or recovery facilities
- Support for energy recovery from waste, for waste that cannot be recycled

<sup>23</sup> <http://www.ecofriends.ro/en/legea-nr-211-din-15-noiembrie-2011-privind-regimul-deseurilor/>

- Reduction of the amount of waste disposed of through storage

In gazetting the strategy in December 2013, the Roman government noted<sup>24</sup> it would influence behaviour and actions of the following categories:

- Producers of goods: reuse products using more recycled materials and design products to generate less waste
- Merchants: reduce the quantity of waste generated by their activities
- Generators of waste: separate waste for recycling and recovery purposes and modify consumer behaviour towards purchasing products that generate less waste
- Environmental authorities: provide adequate services to manage all types of waste streams
- Waste management industry: invest in the best techniques available in the field of waste recovery/recycling and ensure proper waste management services are provided to facilitate recycling and recovery of waste generated by economic agents.

Romania's top priority is to establish integrated regional waste management systems, for each of the country's 41 counties. On average these are home to 400.000 inhabitants.

The municipality of Bucharest (2 million inhabitants) presents a specific challenge.

Romania also expresses a strong preference for developing recycling capabilities – although the EU sees a role for EfW as well. A lack of robust projects means available EU funds continue to be underutilised.

### Waste management: EU funding

In the 2014-2020 work plan, **€2,9 billion** of EU Structural Funds have been earmarked for:

- reducing non-compliant landfills and increasing preparation of waste for recycling
- extension and rehabilitation of water supply and wastewater treatment systems

The EIB has also committed €360 million of project co-financing.

JASPERS<sup>25</sup> – a technical assistance partnership managed by the EIB<sup>26</sup> – has been an important instrument of the EU Cohesion Policy<sup>27</sup>. It focuses on large projects – waste, water, transport, energy, infrastructure – with total costs exceeding €50 million (environmental projects) or €75 million (transport or other sectors).

A number of initiatives were financed between 2007 and 2013 under the Operational Programme Environment<sup>28</sup> (“OPE 2013”). €5,6 billion (85% EU-financed) was invested along six priority axes. #2: “Development of integrated waste management systems and rehabilitation of historically contaminated sites,” attracted €1,17 billion of funding to the end of 2013; although axis #1 – “Extension and modernisation of water and wastewater systems” – attracted nearly three times that: €3,27 billion.

Prior financed actions, under OPE 2013, include:

- Projects for the strengthening and expansion of integrated systems of waste management, in compliance with the waste hierarchy (prevention, preparation for reuse, recycling and other methods of recovery, including treatment and disposal):
  - closure and rehabilitation of non-compliant landfills
  - opening and expansion of new landfills
  - implementation of selective collection systems

<sup>24</sup> Official Gazette of Romania no. 750 dated 4 December 2013.

<sup>25</sup> <http://www.jaspers-europa-info.org/>

<sup>26</sup> The partnership is co-sponsored by the EC's DG Regional and Urban Policy and the European Bank for Reconstruction and Development

<sup>27</sup> [http://ec.europa.eu/regional\\_policy/sources/docgener/informat/basic/basic\\_2014\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docgener/informat/basic/basic_2014_en.pdf)

<sup>28</sup> [http://ec.europa.eu/regional\\_policy/en/atlas/programmes/2007-2013/romania/operational-programme-environment-3](http://ec.europa.eu/regional_policy/en/atlas/programmes/2007-2013/romania/operational-programme-environment-3)



- construction of transfer installations and recovery/treatment facilities, including composting platforms, individual composting units and MBT plants
- Strengthening the institutional capacity of beneficiaries in the field of integrated waste management – as an integral part of individual projects.
- Support for the preparation of a project portfolio for the period 2014-2020 and post 2020 (when applicable).

## Waste Management: key players & influencers

The key Ministry is the **Ministry of the Environment**. Grația Leocadia Gavrilă is the Minister. Ms. Gavrilă is also the Vice Prime Minister of the current Cabinet. Since December 2016, the water sector falls under a separate, newly created **Ministry of Water and Forestry**, with Adriana Petcu as a Minister.

The **Ministry of Regional Development, Public Administration and European Funds**<sup>29</sup> is another important partner. The Minister, Sevil Shhaideh, is the second Vice Prime Minister. The department for European Funds oversees the use of EU Structural Funds via its Managing Authority for Large Infrastructure Operational Programme, which appears to harbour the strongest ambitions in terms of driving the market towards EU recycling targets. The department is led by the Minister-Delegate Rovana Plumb.

**Mihai Tudose** is the **Minister of Economy**. His Ministry is hot on sustainable development, although environmental considerations appear to be second order.

The **Ministry of Energy** is the key touchpoint for biomass cogeneration activities. The Minister is [Toma-Florin Petcu](#).

The **National Environmental Protection Agency** (President: Viorel Toma), known in Romania by the acronym ANPM – and the **National Environmental Guard** (General Commissioner: Bogdan Gheorghe Trif) – also have prominent roles to play.

**Constantin Damov**, co-founder of Green Group, one of the country's leading recyclers (turnover: €150 million), is vocal advocate for better recycling.

## Circular Economy, beyond waste management

In October 2016 Romania adopted the **National Climate Change and Low Carbon Green Growth (NCC) Strategy 2016-2020**. The Strategy proposes mitigation measures for reducing GHG emissions for nine economic sectors and adaptation measures to climate change for 12 sectors, including energy. The energy sector is the largest contributor to Romania's carbon footprint, accounting for 58% of total GHG emissions. Romania needs to reduce emissions to deliver on the country's commitments under the EU 2030 targets. Reducing energy sector emissions requires significant investment, particularly in generation and energy efficient housing. Obsolete and inefficient district heating systems also generate significant fiscal losses. According to World Bank calculations, annual investment needed to reduce energy sector GHG emissions while satisfying increasing energy demand is estimated to total €7 billion until 2020.

Other circular economy advances – beyond energy and waste management – that require government intervention may come slowly. Despite growing awareness, economy and environment continue to be perceived as competing priorities (with priority accorded to the former).

- The 'China of Europe' theme creates significant potential in **remanufacturing** and **refurbishment**. Options with the **automotive** sector could be explored as this sector is particularly strong in Romania. The November 2016 Fact-finding Mission visited the [Cycleon-Recare](#)<sup>30</sup> refurbishment facility near Bucharest: a good combination of strong logistics, IT applications, testing and refurbishment and partnering with strong brands. A 14 pages quickscan on the automotive sector in Romania

<sup>29</sup> <http://www.mdrap.ro/>

<sup>30</sup> <http://cycleon-recare.com/>

(18/05/2015, Dutch only) written by Tymon Stefan Cotoarba by order of the Dutch Embassy in Bucharest is available.

- !" The topics of **GPP** and **eco-design** (particularly, in relation to **sustainable construction**) have the interests of the policy makers. Knowledge exchange is a good way forward.
- !" **Biomass cogeneration** topics were explored in a **March 2017 mission** together with the Dutch embassy in Romania.

Biomass type	Installed capacity (MW)	Green certificates received	Total produced energy (MWh)
Electricity generation from energy crops	3.555	63721	28835.75
Electricity generation from forestry and agriculture waste	89.251	969079	597564.34
Electricity generation from municipal waste	3.06	17563	17564.53
Electricity generation from sludge, manure	6.436	4832	4247.618
Electricity generation from biogas	3.75	13,628	5753.82
<b>TOTAL</b>	<b>106.05</b>	<b>1.068.823</b>	<b>653.966,05</b>

Figure 5: Biomass generation, by type, Romania: 2015

#### Bioenergy: EU funding

The **National Rural Development Program (PNDR) 2014-2020** (€9,36 billion<sup>31</sup>) has a line of financing for investments in agricultural holdings to integrate energy efficiency measures and RES. Another financing line is dedicated to afforestation and creation of woodlands.

**Sector Operational Program Large Infrastructure (POIM) 2014 -2020** (€11.88 billion).<sup>32</sup> Priority axis #6 is dedicated to “promoting clean energy and energy efficiency for a low carbon economy” (€197.3 million allocated). Financed actions are focused on increasing the energy production from underexploited renewable sources (biomass, biogas, geothermal); reducing electricity consumption at industrial consumers and household levels; and the increase of primary energy savings by high efficiency cogeneration.

**Sector Operational Program Regional Development (POR) 2014-2020** (€8.25 billion<sup>33</sup>). Priority axis #3 – supporting the transition towards a low carbon economy – has a priority investment line dedicated to **energy efficiency in public buildings and condominiums encouraging energy solutions based on bioenergy** (€2.38 billion allocated). Eligible applicants are local and public authorities.

#### Bioenergy Romanian funding: “Casa Verde” program

The program is managed by the [Environmental Fund Administration](#) and allocated annually. Eligible applications are public administrations and public institutions. Grants (€400,000 equivalent) are provided for installation of heating systems using renewable energy,<sup>34</sup> including replacement or upgrade of traditional systems. Beneficiaries are required to make a 10% contribution.

<sup>31</sup> €8 billion of this comes from the European Agricultural Fund for Rural Development

<sup>32</sup> €6,94 billion from the European Cohesion Fund and €2.48 billion from the European Fund for Regional Development

<sup>33</sup> €6.7 billion of this comes from the European Regional Development Fund

<sup>34</sup> Eligible sources: solar; geothermal; wind; hydro; biomass; gas generated in waste fermentation processes; gas generated from WWTS sludge fermentation; biogas; any other systems that lead to the improvement of the air, water and soil.



## Dutch-Romanian relations

### Twinning cities

Dutch city	Romanian city	Activity
Alblasserdam	Luna de Sus	[no information]
Assen	Avrig	[no information]
Deventer	Sibiu	[no information]
Doorn	Victoria	[no information]
Duiven	Calafat	[no information]
Eindhoven	Timișoara	[no information]
Gemert-Bakel	Titu	[no information]
Houten	Bichiș	[no information]
Joure	Mediaș	[no information]
Lingewaard	Mizil	[no information]
Maassluis	Târgu Secuiesc	[no information]
Middelburg	Simeria	[no information]
Putten	Câmpia, Turzii, Turda	[no information]
Reusel	Tulcea, Ceamurlia de Jos	[no information]
Rotterdam	Constanța	[no information]
Sassenheim	Tileagd	[no information]
Scharsterland	Mediaș	[no information]
Sittard, Geleen	Brastavățu	[no information]
Sliedrecht	Orăștie	[no information]
Vianen	Reghin	[no information]
Werkendam	Tulcea	[no information]
Zutphen	Satu Mare	[no information]

### Looking forward: suggested priority areas for follow-up in waste management

#### G2G

- Align with the embassy to coordinate support for capacity building and initiating public-private dialogue, to lay the foundation for business opportunities and societal gains.
- Support the Ministry of Environment to develop the vision, strategy and strength required to accelerate establishment and implementation of the WMP, in collaboration with stakeholders.
- Explore a potential collaboration with the EIB, which organises institutional support at national level.
- Build on the success of the past GPP initiative, which was well received.

- Gauge the ‘appetite’ of mayors and municipalities, whose support will be instrumental.
- Facilitate inbound missions to The Netherlands (RVO could play a role; cf. ‘influentials’ program).

## B2B

The Netherlands is a strong investor in Romania, providing a sound platform to build on.

- Target dynamic local business clusters, leveraging the ambitions of cities with Zero Waste ambitions or dynamic twin city relationships and Bucharest’s self-image as a living lab, building on existing partnerships and proposing new tools such as city scans and roadmaps.
- Explore refurbishment and remanufacturing opportunities.
- Explore Dutch interest for the fast(er) developing EPR niche flows.
- Pursue opportunities in agro-food collaborations and organic waste (manure is a significant component of MSW), which could be fruitful for firms like Agrifirm, Priva or Orgaworld.
- Align with the HCH March 2017 mission on investigation of biomass cogeneration leads.
- Encourage the following groups to monitor market developments:
  - recycling technology providers (plastic packaging, ELV)
  - container suppliers and developers of modular environmental street concepts (like Module)
  - consultants with expertise in implementing regulation at local level – and answering to EU tenders (post-WMP promulgation)
- Follow-up with the branches on the scale of opportunities in the construction & demolition (if the landfill tax, once passed, is sufficiently high) and further extend work in the water sectors.
- With the help of local business partners: compile an inventory of joint waste management tenders linked with regional implementation of EU funding as well calls and tenders with science institutes. (Embassy)
- Promote the visibility of Dutch technology in collaboration with branches like FME-ENVAQUA (Embassy).

## Events in Romania in 2017

A **Biomass Cogeneration Outgoing Trade Mission** has been organised between **6-9 March 2017, in Bucharest**. The mission was co-organised by the Dutch embassy, RVO and the European Enterprise Network. For additional information, contact **Kees Mokveld**, Liaison Officer Energy, Netherlands Enterprise Agency, T +31 (0)88 602 2313, [kees.mokveld@rvo.nl](mailto:kees.mokveld@rvo.nl). Further details are set out in Appendix 1.

## Further information: Romania

### Ministry of the Environment, Water and Forests<sup>35</sup> (Romanian only)

- Address: Bvd. Libertății nr. 12, Sector 5, București
- Phone: 021 408 9642

### Ministry of Economy<sup>36</sup> (Romanian only)

- Address: Calea Victoriei, nr. 152, sector 1, București, cod 010096
- Phone: 021 202 54 26

### Ministry of Regional Development, Public Administration and European Funds<sup>37</sup> (Romanian only)

- Address: Tower Center, Bd. Ion Mihalache, nr 15-17, Sector 1, București.
- Phone: 037 283 87 43

Different Angle Cluster<sup>38</sup> “promotes and supports research, innovation and education in order to develop and implement solutions meant to transform Bucharest into a smart city.” They are the organisers of the Different City Smart Conference.

- Marius Hanganu is the President.
- Contact details are available here.

CMS<sup>39</sup>, based in Bucharest, is an international law firm. Contact Loredana Mihailescu, Senior Associate, +40 21 4073 876, [loredana.mihailescu@cms-cmck.com](mailto:loredana.mihailescu@cms-cmck.com)

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<sup>35</sup> <http://www.mmediu.gov.ro/>

<sup>36</sup> <http://www.minindeconomie.gov.ro/>

<sup>37</sup> <http://www.fonduri-ue.ro/>

<sup>38</sup> <http://differentangle.ro/about-us/mission-objectives/>

<sup>39</sup> <https://cms.law/en/ROU/Office/Bucharest>

## Appendix 1: Biomass Cogeneration Mission (RO, March 2017)

Romania's biomass co-gen market is developing steadily, under the radar. The mission capitalised on:

- Romania's recent identification of biomass cogeneration as a policy priority,<sup>40</sup> recognising its potential as a key renewable energy source
- abundantly available biomass material
- considerable financing available under EU operational programmes for Romania
- good technical expertise and skilled human resources in the Romanian energy sector

Opportunities for Dutch business are anticipated for the following reasons:

- new legislation, supporting the development of CHP and biomass, is expected soon
- price and costs are stable
- there is substantial unmet potential (especially for small plants)

The mission facilitated direct contacts with the main market players and institutional stakeholders, and offered a platform for first-hand information exchange about project possibilities.

The mission was targeted particularly at Dutch companies active in the following areas:

- Bioenergy technology providers (& energy procurement and construction companies)
- Heating solutions for industrial use (including greenhouses, food industry, farms, etc.)
- Heating solutions for district heating
- Import of forest biomass (wood chips, pellets, etc.)
- Project investments in biomass, biogas and waste-to-energy
- Companies providing high efficiency cogeneration solutions

The embassy intends to organise a follow-up, inbound mission to The Netherlands.

### Biomass industry figures (2015) and information

- 59 CHP installations (total capacity: 3393.16 MW), mostly natural gas fuelled
- 32 biomass generation installations (of 1172 authorised units producing renewable energy)
- 90% of rural households (15% of urban households) use biomass - mainly wood - as their primary heating source, albeit usually in inefficient firewood stoves. Estimated firewood consumption: 36 TWh. Wood industry by-products are already largely used as fuel for heating production, especially in smaller private heating power plants and installations.
- Biofuel production has grown substantially in the past 5 years: 49.3 KTOE (2010) vs. 166.9 KTOE (2015). Biodiesel shows the biggest increase (72% of total biofuel production: 2013).
- Sunflower and rapeseed are the main raw material sources (together, over 92%). Sunflower production, in particular, has increased (73% from 2010 to 2014).
- Biofuel and biogas production are considered to have highest potential (2015 production: 1500 GWh and 450 GWh respectively). 2030 expected production is 4100 GWh for biofuels (partially driven by national target of 10% of RES in the transport sector by 2020); biogas is projected to grow seven times faster, to 3500 GWh.<sup>41</sup>
- Biomass from manure potential lies in poultry and swine husbandry activities. These are the most industrially organised and together generate more than 75% of estimated manure quantities.

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<sup>40</sup> Energy Strategy of Romania 2020-2035; Renewable Energy Action Plan 2020

<sup>41</sup> Driven by agricultural sector development but also modernisation of wastewater treatment plants

## Appendix 2: Country and Capital Factsheets

### Romania

National Fact Sheet: Romania

#### National factsheet on separate collection

### Romania

#### 1 General requirements on separate collection based on national legislation

The Law No. 211/2011 that was implemented in 2011 is the law transposing the requirements of the WFD into domestic law.

Most of the requirements of WFD have been exactly / literally transposed into national legal requirements.

However, the Articles 10 (2) and 11 (1) of the WFD have been adjusted by Law no. 211/2011. In particular, article 14 of Law no. 211/2011 make no reference to avoid mixing materials with different properties, whereas article 17 of Law no. 211/2011 differentiates the target year of 2015 for the setting up separate collection to 2012, making the target more difficult to be fulfilled.

The Law no. 132/2010 is the law on the regulation of the selective collection of paper, cardboard, metal, plastic and glass in public institutions

Table 1: Overview of national law(s) that implement separate collection

Year and Abbreviation	Title of the law (translation)
[RO Law 211/2011]	Legea 211/2011 privind regimul deșeurilor, republicată 2014 privind regimul deșeurilor (The Waste Regime Law no. 211 of 15th November 2011)

Table 2: Overview on evaluation categories

Evaluation	Explanation
additional	The requirements of the WFD have been transposed and additional information or requirements are set out in the national legal requirement, i.e. additional definition, precision of requirement that goes beyond the text of the WFD
one:one	The requirement of the WFD has been transposed exactly /literally or transposed analogously. No additional requirements or explanations are set out.
deviating	The requirements of the WFD have been implemented into national legal requirements but have been adjusted, left out or deviated
not included	The requirement of the WFD is not transposed into national law



Table 3: Assessment on national transpositions

Law & Article	Evaluation	English text	Original text
1 Article 3 (11) WFD: Definition separate collection: "separate collection" means the collection where a waste stream is kept separately by type and nature so as to facilitate a specific treatment"			
[RO Law 211 2011] Annex 1	One:one	Annex 1 (7) separate collection – collection where a waste flow is kept separately depending on the waste type and nature with the purpose to facilitate their specific treatment	Annex 1 (7) colectare separată - colectarea în cadrul căreia un flux de deseuri este păstrat separat în funcție de tipul și natura deșeurilor, cu scopul de a facilita tratarea specifică a acestora
2. Article 10 (2) WFD: "waste shall not be mixed with other waste/material with other properties"			
[RO Law 211 2011] Article 14 (2)	deviating	14 (2) Operators who provide waste collection and transport are required to ensure their separate collection and not mix the wastes.	14 (2) Operatorii economici care asigură colectarea și transportul deșeurilor au obligația de a asigura colectarea lor separată și de a nu amesteca aceste deseuri.
3. Article 11 (1) WFD: "measures to promote high quality recycling"			
[RO Law 211 2011] Article 16 (2)	One:one	16 (2) The central public authority for the environment protection promotes the high quality recycling by applying the separate waste collection, as far as it is feasible from a technical, economic and environmental point of view and is compliant with the quality standards in the respective recycling sector, by legal provisions submitted to Government approval.	16 (2) Autoritatea publică centrală pentru protecția mediului promovează reciclarea de înaltă calitate prin aplicarea colectării separate a deșeurilor, în măsura în care este fezabilă din punct de vedere tehnic, economic și de mediu și se conformează cu standardele de calitate în sectorul de reciclare respectiv, prin acte normative care se supun aprobării Guvernului.
4. Requirement WFD: 11 (1) "separate collection if technically practicable"			
[RO Law 211 2011] Article 16 (2)	One:one	16 (2) The central public authority for the environment protection promotes the high quality recycling by applying the separate waste collection, as far as it is feasible from a technical, economic and environmental point of view and is compliant with the quality standards in the respective recycling sector, by legal provisions submitted to Government approval.	16 (2) Autoritatea publică centrală pentru protecția mediului promovează reciclarea de înaltă calitate prin aplicarea colectării separate a deșeurilor, în măsura în care este fezabilă din punct de vedere tehnic, economic și de mediu și se conformează cu standardele de calitate în sectorul de reciclare respectiv, prin acte normative care se supun aprobării Guvernului.
5. Requirement WFD: 11 (1) "separate collection if economically practicable"			
[RO Law 211 2011] Article 16 (2)	One:one	16 (2) The central public authority for the environment protection promotes the high quality recycling by applying the separate waste collection, as far as it is feasible from a technical, economic and environmental point of view and is compliant with the quality standards in the respective recycling sector, by legal provisions submitted to Government approval.	16 (2) Autoritatea publică centrală pentru protecția mediului promovează reciclarea de înaltă calitate prin aplicarea colectării separate a deșeurilor, în măsura în care este fezabilă din punct de vedere tehnic, economic și de mediu și se conformează cu standardele de calitate în sectorul de reciclare respectiv, prin acte normative care se supun aprobării Guvernului.
6. Requirement WFD: 11 (1) "separate collection if environmentally practicable"			
[RO Law 211 2011] Article 16 (2)	One:one	16 (2) The central public authority for the environment protection promotes the high quality recycling by applying the separate waste collection, as far as it is feasible from a technical, economic and environmental point of view and is compliant with the quality standards in the respective recycling sector, by legal provisions submitted to Government approval.	16 (2) Autoritatea publică centrală pentru protecția mediului promovează reciclarea de înaltă calitate prin aplicarea colectării separate a deșeurilor, în măsura în care este fezabilă din punct de vedere tehnic, economic și de mediu și se conformează cu standardele de calitate în sectorul de reciclare respectiv, prin acte normative care se supun aprobării Guvernului.
7. Article 11 (1) WFD: "separate collections (...) appropriate to meet the necessary quality standards for the relevant recycling sectors"			
[RO Law 211 2011] Article 16 (2)	One:one	16 (2) The central public authority for the environment protection promotes the high quality recycling by applying the waste separate collection, to the extent it is feasible from technical, economical and environment point of view and is compliant with the quality standards in the respective recycling sector, by legal provisions submitted to Government approval.	16 (2) Autoritatea publică centrală pentru protecția mediului promovează reciclarea de înaltă calitate prin aplicarea colectării separate a deșeurilor, în măsura în care este fezabilă din punct de vedere tehnic, economic și de mediu și se conformează cu standardele de calitate în sectorul de reciclare respectiv, prin acte normative care se supun aprobării Guvernului.
8. Article 11 (1) WFD "by 2015 separate collection shall be set up for at least the following: paper, metal, plastic and glass"			
[RO Law 211 2011] Article 17 (1)	additional	17 (1) The local public administration authorities have the obligation that starting with year 2012 to provide the separate collection for at least the following waste types: paper, metal, plastic and glass.	17 (1) Autoritățile administrației publice locale au obligația ca începând cu anul 2012 să asigure colectarea separată pentru cel puțin următoarele tipuri de deseuri: hartie, metal, plastic și sticlă.
9. Article 22 WFD: Bio-waste - Member States shall take measures, as appropriate (...) to encourage: "a) the separate collection of bio-waste with a view to the composting and digestion of bio-waste"			
[RO Law 211 2011] Article 31 (1)	additional	31 (1) The local public administration authorities have the following responsibilities: a) to separately collect the bio-waste, in order to be composted and digested;	31 (1) Autoritățile administrației publice locale, potrivit prevederilor art. 4 alin. (1)-(3) și art. 20, au următoarele responsabilități: a) să colecteze separat biodeșeurile, în vederea compostării și fermentării acestora;

## 2 General requirements on separate collection based on main strategies

Romania	271 kg MSW/capita 2.58% recycling
<p><b>Definition of Municipal solid waste (MSW):</b></p> <p>According to the Romanian Waste Management Plan [RO WMP 2004, p. 49] the terminology of “municipal waste” refers to both household waste and bulky waste separately collected and to waste resulted from the public areas cleaning (parks, markets and street waste).</p> <p>Also according to [RO WMP 2004, p. 51] “collection of municipal waste is in the responsibility of the municipalities, either directly (by special services subordinated to Local Councils) or indirectly (by commissioning this responsibility with a contract, to specialized sanitation companies).”</p>	
<p><b>Main strategies implementing separate collection</b></p>	
<p>The national strategy for the separate collection of waste is laid down in [RO Law 211 2011] on the waste regime and in [RO GD 856 2002] on waste management record keeping and the approval of the list of waste. These laws transpose the requirements of the Waste Framework Directive 2008/98/EC into Romanian legislation.</p> <p>[RO Law 132 2010] regulates the separate collection of paper, cardboard, metal, plastic and glass in public institutions, by establishing requirements for the organisation and operation of the separate collection. According to [RO GD 621 2005] the public institutions, associations, foundations and private persons have to collect the packaging waste separately in different containers, properly inscribed and located in special areas, accessible to private persons.</p> <p>Additionally in Romania it is the aim to include the <b>largest possible number of waste producers to the systems of waste collection</b> and transport. Also it is the target to redesign the separate waste collection system in order to cover more waste producers, by the geographical extension into more urban and rural areas of the current collection system [RO WMP 2004].</p> <p>In order to meet the targets for the recycling/recovery of packaging waste the collection of recyclable waste like paper and cardboard, plastic and metal and glass is proposed in the Waste Management Plan. <b>The selective collection of recyclable waste has to be implemented both in urban and rural areas.</b> [RO WMP 2004, p.24]. Also, according to the [RO WMP 2004, page 25] until the year 2017, a key subsidiary waste management objective is the extension of selective waste collection at source.[RO NWMP 2004]</p> <p>According to the same [RO WMP 2004], p. 8, the separate collection of biodegradable material can be achieved in all regions where the population lives in households, with gardens. Given the current situation in Romania it is necessary to introduce separate collection of biodegradable material in less dense urban areas, green areas of major cities and in some rural areas, these representing 25-35% of the population [RO NWMP 2004]</p>	

### 3 Implementation of separate collection

#### Overview on separate collection systems in place

As regards the recycling performance of Romania, the total level of recycling of MSW is very low and did not increase during the last ten years [RO ETC/SCP 2013].

In regards of the organisation of separate collection [RO Law 132 2010] Art. 9 sets that containers and bins used for separate collection must be labelled with name of material(s) for which they are intended and each office of public institutions will be provided with 3 separate waste collection bins. They will be coloured, depending the collected waste type, namely blue for paper and cardboard, yellow for metal and plastic and white for white glass and green for coloured glass.

According to [RO EC Roadmap 2013, page 2], approximately 70 % of the population had access to municipal waste collection service in 2010 (increased now to 80-85 %). Most rural areas are lacking collection services. The **separate collection for household packaging waste** from the private sector is still **poorly developed** (23 % of total population). The system will be enhanced with additional bins for the fractions paper/cardboard, metal/ plastic and glass, as required by law. There is very **limited bio-waste collection**. [RO EC Roadmap 2013]






Still, the most common approach in **urban areas** is the **bring points separate collection system**. In the capital city of Bucharest the recyclable waste fractions are mostly collected through bring points bring points using bell type containers based on a voluntary approach. The following 3 bell containers are used:

- Bell type bin for plastic and metal;
- Bell type bin for paper and cardboard;
- Bell type bin for glass.

Also, according to project documents for the implementation of an Integrated Waste Management System in following 5 counties: Botosani, Calarasi, Ilt, Suceava, Vaslui, **25 civic amenities** are foreseen to be established in the mentioned counties [RO Assistance 2013].

Approximately **96 % of the household waste and household like waste is collected using a door-to-door system in a mixed residual waste bin** (in households served by the municipal waste collection service). Although the separate collection has increased through environmental campaigns and educational activities, the environmental awareness and readiness to participate in separate collection of the public is still on low level [RO EC Roadmap 2013].

Table 4: Overview of main separate collection systems in Romania

Collection type	Paper	Glass	Plastic	Metal	Bio-waste
Door-to-door collection 					Very rare (green garden and street waste)
Co-mingled (door-to-door) 					
Bring points 	Secondary	Secondary	Secondary (co-mingled)		
Civic amenities 	25 civic amenities are foreseen to be established				
Producer/retail take-back 					




## Capital factsheet on separate collection

**Note:** This 'Capital factsheet' has been prepared within the EC study "Assessment of separate collection schemes in the 28 capitals of the EU". The document represents the status-quo of the EU Member States capitals in May 2015. The information included in this document has been elaborated for all 28 EU-capitals based on expert interviews with various stakeholders on capital level, e.g. capital administrations, waste management operators, associations etc. as well as further publically available reports, statistics and websites.

All information is cited in the factsheet and a complete list of information sources including the interviews held can be found at the end of this document.

Bucharest		Romania	
<b>SUMMARY:</b> No door-to-door systems in place, the city relies exclusively on bring points. No collection of bio-waste, only dry recyclables are targeted. The capture rates of all dry recyclables are low. Improvements needed, as the performance of the bring points' system is limited. Fee system is poorly established, in one District of Bucharest the waste fee was disestablished with the last election. Data about waste management is hardly available.			
<b>1 Capital general data</b>			
City population (inhabitants)		1 919 352	
City area (km²)		228	
City density (persons/km²)		8 065	
City climate (mediterranean, continental, oceanic, nordic; relevant for bio-waste collection)		Continental	
<b>2. Capital waste data</b>			
Total (municipal) waste generation (t in indicated year)		751 058 t [1]	
Total (municipal) waste generation (kg/cap)		391.3 (2012) [1]	
Total separate collection (kg/cap) & (% of generation)		11.7 kg/cap [1]	
Percentage breakdown of total collection for separate collection by fraction		Not available	
<b>3. Description of overall separate collection systems operating in capital</b>			
<p>Municipality Bucharest is divided into <b>6 districts</b> (sectoare). Bucharest City Hall (PMB) is organized and operates according to Local public administration Law no. 215/2001 and in accordance with the decisions of the Bucharest Municipality General Council. Currently waste is collected separately in pilot projects. Municipal waste collection is performed by private sanitation operators holding contracts with District Halls of districts 1 to 6.</p> <p>Currently, in the Municipality of Bucharest 5 private operators exist responsible for municipal waste collection and transportation, namely:</p> <ul style="list-style-type: none"><li>• SC ROMPREST SERVICE SA;</li><li>• SC SUPERCOM SA;</li><li>• SC ROSAL SA;</li><li>• SC RER Ecologic Service București REBU SA;</li><li>• SC URBAN SA</li></ul> <p>In most districts, there are only bring containers of 1.1 m³ available for all dry recyclables, bell type containers of 2.5 - 3 m³. Also, bags for separate waste collection have been distributed to households, schools and businesses. [1]</p>			

<p><b>Paper and cardboard, glass, plastic and metal:</b> In several locations in the 1-6 districts bell type containers or bins are placed for the separate collection of all dry recyclable fractions together in one bin. In addition, specific bins were provided to households, schools and businesses in District 4.</p> <p>In Municipality of Bucharest the separate collection is performed as follows:</p> <p><b>District 1</b> – in 230 locations, bell type containers of 2,5 m<sup>3</sup> were placed for separate collection of paper, plastic and metal and glass and in 250 locations containers of 1,1 m<sup>3</sup> for separate collection of plastic and metal, paper and cardboard, glass.</p> <p><b>District 2</b> - in 108 locations 300 bell type containers of 2,5 m<sup>3</sup> were located for separate collection of paper and cardboard, plastic and metal and glass.</p> <p><b>District 3</b> – in 28 locations 56 bell type containers of 1 m<sup>3</sup> were located for separate collection of paper and cardboard, plastic, and in 31 locations 89 bell type containers of 2,5 m<sup>3</sup> for paper and cardboard, plastic and metal and glass.</p> <p><b>District 4</b> - in 26 locations 78 bell type containers of 1,2 m<sup>3</sup> were located for separate collection of paper and cardboard, plastic and metal and glass. In addition:</p> <ul style="list-style-type: none"> <li>at 208 households 474 containers of 1,1 m<sup>3</sup> 84 bins of 240 l, 6 bins of 120 l, 2 containers of 4 m<sup>3</sup> were distributed for separate collection of paper -cardboard, plastic, glass waste;</li> <li>at 710 businesses and institutions, 778 containers of 1,1 m<sup>3</sup>, 438 bins of 240 l, 199 bins of 120 l were distributed for separate collection of paper -cardboard, plastic, glass waste</li> <li>at 64 schools 12 containers of 1,1 m<sup>3</sup>, 10 bins of 240 l and bags were distributed for separate collection of paper - cardboard, plastic waste</li> </ul> <p><b>District 5</b> - in 37 locations 74 containers of 1,1 m<sup>3</sup> were located for separate collection of paper, plastic.</p> <p><b>District 6</b> - on public domain 120 locations were created and bell type containers of 3 m<sup>3</sup> were placed for separate collection of paper, plastic and in 113 locations bell type containers of 3 m<sup>3</sup> for separate collection of glass waste. Also, in 23 points containers of 1,1 m<sup>3</sup> are placed for separate collection of paper and plastic, and in 22 points containers of 1,1 m<sup>3</sup> for glass.</p> <p>The separate collected waste is then transferred separately by private operators via various vehicles (waste trucks, lorries etc.)</p> <p><b>Bio-waste:</b> until now, no separate collection of bio-waste takes place. [1]</p> <p>No separate or co-mingled door-to-door collection of dry recyclables is established in Bucharest.</p>	
<b>Annual Running Costs: Not available</b>	
<b>Setup costs: Not available</b>	
<b>Coverage:</b> ~ 15% from population [1]	
<b>4. Elements of the collection system</b>	
<b>MUNICIPALITIES OR THEIR CONTRACTORS</b>	
 Bring Collection Points – Co-mingled in one container	
<b>Fractions collected</b>	Paper, glass, plastic, metal (additional fraction: wood) [1]
<b>Number of collection points</b>	988 (total) 51.5 (per 100 000 inhabitants)
<b>Collected quantities in 2014</b>	<b>Paper:</b> 8 413 t [1]
	<b>Plastic:</b> 9 202 t [1]
	<b>Glass:</b> 3 282t [1]
	<b>Metals:</b> 915 t [1]
	<b>Wood:</b> 700t [1]
<b>Setup costs</b>	<b>Not available</b>
<b>Running costs</b>	<b>Not available</b>
<b>Source of funding</b>	Waste budget
<b>Cost to consumer</b>	<b>Not available</b> , in one district no waste fee/tax

5.Materials, Quantities and costs						
SUMMARY OF COLLECTION SYSTEMS IN PLACE						
Collected waste (t)	Paper	Glass	Plastic	Metal	Bio-waste	City Coverage
Door-to-door						
Co-mingled						
Bring points	8 413	3 282	9 202	915		988 + 15% of population
Civic amenities						
Producer / Retailer take-back						
Total	8 413	3 282	9 202	915		
SUMMARY OF COSTS FOR SEPARATE COLLECTION SYSTEMS IN PLACE (setup costs should be total, running costs annual)						
Costs (€)	Authorities / waste management companies		Consumer costs			
	Setup (€)	Running (€/year)	Funding type		Amount (€)	
Door-to-door	Not available					
Co-mingled						
Bring points						
Civic amenities						
Producer / Retailer take-back						
Total						
6. Recycling and losses						
RECYCLING OF THE COLLECTED WASTE						
Recycled (t)	Paper	Glass	Plastic	Metal	Bio-waste	Total
Generated	Not available	Not available	Not available	Not available	Not available	Not available
Collected	8 413	3 282	9 202	915		22 512 (including wood)
Recycled nationally	Not available					
Exported for recycling						
Rejected						



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Netherlands Enterprise Agency  
Prinses Beatrixlaan 2  
PO Box 93144 | 2509 AC The Hague  
T +31 (0) 88 042 42 42  
E [klantcontact@rvo.nl](mailto:klantcontact@rvo.nl)  
[www.rvo.nl](http://www.rvo.nl)

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