No time to waste
Cohesion Funds programming for a resource-efficient Europe

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Executive summary

The aim of this policy analysis is to directly link the European Waste Framework Directive (2008/98/EC) and the new Cohesion Policy Regulation by understanding the Resource Efficient Europe Initiative.

The Resource Efficiency Initiative, which consists of the Resource Efficiency Flagship Initiative, the Resource Efficiency Roadmap and a European Parliament resolution, urges Member States to ensure full implementation of European waste legislation, including minimum goals for waste reduction through national waste management plans and strategies. It additionally emphasizes that current goals for separate waste collection have to be further developed and that highest standards for material recovery have to be set. The Resolution also underlines the need for EU funds financing for the activities higher up the waste hierarchy as defined in the Waste Framework Directive (where the priority is given to recycling rather than investments in landfills or incinerators). It also gives guidelines to the European Commission showing that there is a need for corrections and alignment of the calculation methodology and waste statistics in order to build a reliable basis for promotion and implementation of recycling in the European Union.

This study therefore offers evidence and guidelines for the development of sustainable Operational Programmes in EU Member States in the waste management sector, the sector where most countries in central and eastern Europe seriously lag behind EU standards and achievements.
Introduction

The European Commission has calculated that in reaching all the goals from the EU waste acquis across the EU, an additional 400 000 green jobs could be created, and if the goals from Resource Efficiency Roadmap are reached, an additional 526 000 new working places could be opened in the EU. This is the main reason why the European Union today sees the waste sector not only as an important environmental issue but also as a major potential for green jobs in European Union. Besides opening new working places, sustainable waste management (reusing, recycling and composting) increases the security of material supplies, increases the competitiveness of European industry, increases resource efficiency, cuts greenhouse gas emissions and supports the research and development goals of the European Union. Today, in CEE countries, but also more widely, we also have to address a significant need for investments in the waste sector to meet the requirements of the environmental acquis. This is additionally the purpose of this paper – to ensure that these guidelines are implemented in operational programmes for each country of the European Union.

As the year 2020 approaches rapidly and only one Cohesion budget period is available to Member States, the European Commission suggests that it is important to ensure public financing from the EU budget in a way that priority is given to the activities which are higher ranked in the waste management hierarchy. This study will present valuable argumentation for shaping the MS operational programmes (OPs) for environment in a much greener way than the previous OPs, whose primary goal in the previous programming period were large investments in incinerators or landfills.

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One of the most significant and visible kinds of evidence of human existence in this world is waste. Humans create waste in every aspect of their lives by consuming natural resources, whether directly or indirectly. However, the extent to which modern societies have “waste problems” varies greatly, because modern trends have shown new, greener and less expensive solutions for this type of environmental problem where waste is no longer material which people throw away, but new material for future re-production, re-design, and of course, re-use. Some of these models are known as “zero waste” which support prevention and re-use instead of energy recovery or disposal of the materials. Such examples can be found in Italy, Germany or Belgium and these trends are continuing to grow. But, re-use is only one of the concepts in the waste hierarchy presented by the European Union.

The first principle is the prevention of waste production. This is very important even though according to the latest guidance published by the European Commission, “prevention” is not a waste management operation because it concerns substances or objects before they become waste. Prevention is a crucial basis for waste management because it has influence on the amounts of waste in the production stage but also in the landfilling phase.

The next step is the preparation for re-use phase. There are some waste streams that can be re-used in the same or different ways purposes as original product. For example, furniture, books or clothes can easily be re-used for different purposes.

After re-use, some fractions can be materially recovered (recycled or composted), such as: paper, glass, metals, plastics or bio-waste. All of them need to be sorted out separately due to easier recycling processes or composting (composting of source separated materials produces compost usable for agricultural purposes).

Disposal is the last option and it should be done only for materials that cannot be materially recovered through the first three stages or have energy recovered from them (as a 4th hierarchy step). This step includes some disposal technologies or simple landfilling.

Improving waste management makes better use of resources and can open up new markets and jobs, as well as encouraging less dependence on imports of raw materials and lower impacts on the environment. The European Commission has often proposed very large fines for those who are not adhering to the rules. Countries like Poland or Italy are paying great amounts of money per each tonne of untreated waste or just for not transposing the Waste Framework Directive into national law.

Framework for actions

Public financing opportunities for waste management for member states (MS) comes from so-called EU Funds where for the time period between 2014 and 2020 more than 347 billions are secured from Structural Funds. These funds are used for financing the Regional Development policy of the European Union, whose main objective is to equalize the disparities connected to income, wealth and development of Europe. So far these funds have been spent mostly on landfills, incinerators and mechanical biological treatment plants although the waste management hierarchy was additionally confirmed in 2008 by the revised Waste Framework Directive.

The Cohesion Policy regulation for the budget period 2014–2020 has elements of strategic planning and programming and includes the list of joint thematic objectives defined in the Europe2020 strategy – employment, innovation, education, social inclusion and climate/energy – to be reached by 2020. Although waste management sector provides opportunities in at least 3 main objectives it has been placed under climate change and energy objectives which states "greenhouse gas emissions 20% (or 30%, if the conditions are right) lower than 1990, 20% of energy from renewable sources and 20% increase in energy efficiency compared to business as usual"
Resource efficiency

During 2011, European Union made a significant step in the popularization and institutionalization of the term 'resource efficiency' by introducing the Resource Efficiency Flagship (REF) in January and the Resource Efficiency Roadmap in September 2011. If waste is to become a resource to be fed back into the economy as a raw material, as the European Commission in the Roadmap to a Resource Efficient Europe emphasises, then much higher priority needs to be given to re-use and recycling.

Resource Efficiency Flagship

The Resource Efficiency Flagship is one of 7 sectoral and horizontal documents of the Europe 2020 strategy and represents the EU strategy for the creation of a circular economy based on a recycling society whose aim is to reduce the amount of waste and to increase the usage of waste as a resource. Of course, the REF also covers other topics such as energy, water, agriculture etc. This document emphasises that the recovery of waste and the use of recovered materials should be encouraged in order to conserve natural resources. Such improved practice in waste management operations can significantly reduce carbon footprints. For example, EU member states annually landfill EUR 5.25 billion worth of recyclables like paper, glass, plastics, aluminium and iron. If this was recycled, the equivalent of 148 million tonnes of CO\textsuperscript{2} emissions could be avoided annually. Also, 90 million tonnes of food waste is produced every year in the EU\textsuperscript{3}, around 180 kg per person and around 40% of that biowaste is still going to landfill.

In term of indicators of progress the flagship has created modelling assumptions and possible parameter variations, where the medium reference scenario predicts the “full implementation of existing EU waste legislation, notably in terms of achievement of recycling targets and waste reduction” and the best case scenario which is “meeting the waste prevention, reuse and recycling performances of the more advanced Member States, going beyond the minimum EU targets, waste reduction of 15%. Zero landfill in all Member States”. Unless serious action is taken by the CEE countries, it can be expected that either the medium or best reference scenario will not be fulfilled.

\textsuperscript{3} European Commision COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT on Future steps in biowaste management in EU, Brussels, 18.5.2010 COM(2010)235 final
Roadmap to a Resource Efficient Europe

This Roadmap sets the milestones which illustrate what will be needed to put us on a path towards resource-efficient and sustainable growth (it is interesting how the document uses “growth” instead of “development”), and provides a framework explaining how policies interrelate and build on each other and how which future actions can be designed and implemented coherently. The vision of the Roadmap states:

“By 2050 the EU’s economy has grown in a way that respects resource constraints and planetary boundaries, thus contributing to global economic transformation. Our economy is competitive, inclusive and provides a high standard of living with much lower environmental impacts. All resources are sustainably managed, from raw materials to energy, water, air, land and soil. Climate change milestones have been reached, while biodiversity and the ecosystem services it underpins have been protected, valued and substantially restored.”

Resource efficient development is designed to be the route to this vision. It should allow the economy to create more with less, delivering greater value with less input, using resources in a sustainable way and minimising their impacts on the environment.

Each year in the European Union we throw away 2.7 billion tonnes of waste, 98 million tonnes of which is hazardous. On average only 40% of solid waste is re-used or recycled in the EU, the rest going to landfill or incineration. In some Member States more than 60% of waste is recycled, indicating the possibilities of using waste as one of the EU’s key resources⁴.

Milestones in the roadmap
- By 2020, waste is managed as a resource.
- Waste generated per capita is in absolute decline.
- Recycling and re-use of waste are economically attractive options for public and private actors due to widespread separate collection and the development of functional markets for secondary raw materials.
- More materials, including materials with a significant impact on the environment and critical raw materials, are recycled.
- Waste legislation is fully implemented.
- Illegal shipments of waste have been eradicated.
- Energy recovery is limited to non recyclable materials,
- Landfilling is virtually eliminated and high quality recycling is ensured.

In order to reach the milestones and goals set in the waste legislation (see box above), the EC has prepared an activity agenda with the steps necessary in order to move forward. The EC has committed itself to:

- Stimulate the secondary materials market and demand for recycled materials through economic incentives and developing end-of-waste criteria.
- Review existing prevention, re-use, recycling, recovery and landfill diversion targets to move towards an economy based on re-use and recycling, with residual waste close to zero\(^5\) (in 2014)
- Assess the introduction of minimum recycled material rates, durability and reusability criteria and extensions of producer responsibility for key products (in 2012)
- Assess areas where legislation on the various waste streams could be aligned to improve coherence (in 2013/2014)
- Continue working within the EU and with international partners to eradicate illegal waste shipments, with a special focus on hazardous waste
- Ensure that public funding from the EU budget gives priority to activities higher up the waste hierarchy as defined in the Waste Framework Directive (e.g. priority to recycling plants over waste disposal) in 2012/2013.
- Facilitate the exchange of best practice on collection and treatment of waste among Member States and develop measures to combat more effectively breaches of EU waste rules (in 2013/2014).

As stated in the same document, Member States should be obliged to ensure full implementation of the EU waste acquis including minimum targets through their national waste prevention and management strategies (as continuous activity).

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\(^5\) Although the “zero waste” term has often been neglected by politicians and the waste industry, the zero waste movement has rapidly grown. For example there are at least 25 cities and districts in Italy with zero waste as their official strategy.
Ex-ante conditionalities in the waste management sector

When linking the resource efficiency policy and EU Funds, for purpose of increasing the quality of implementation, the EU has set a new concept of conditionalities in order to create strong incentives for Member States to reach the goals of the Europe 2020 strategy and thus the goals of RE policies. The conditionalities have 3 main forms:

1. **An ex-ante conditionality** which means that certain conditions have to be implemented before the preparation of the Operational Programmes.

2. **An ex-post conditionality** which means that the reimbursements and new allocations will be made only after the evaluation of previous projects and programmes with the conditionalities set in the Regulation.

3. **A macroeconomic conditionality**; it is described in Article 21 of the CPR which is linked with the coordination of Member States’ economic policies.

The ex-ante conditionality under thematic objective number 6: *Protecting the environment and promoting the sustainable use of resources* (referred to in Article 9(6)) which considers waste is defined as:


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**How the conditionalities in the waste sector can bring change – an example**

If the budget allocation for improvement of waste management had the goal of increasing the recycling capacity in a Member State, additional allocations will not be made if the previous allocation was invested in projects which didn’t increase the recycling capacity (e.g. incineration, low-efficiency MBT or landfilling).
The criteria for the fulfilment of this ex ante conditionality are four general requirements described in the subsequent headings:

**First criterion**

A Member State has reported to the Commission on progress towards the targets of Article 11 of Directive 2008/98/EC, reasons for failure, and intended actions to meet the targets.

This first criterion actually represents Point 5 of Article 11 of the WFD and is a legal obligation of the MS regardless of the Cohesion Funds ex-ante criteria.

Article 11 of the WFD presents the Member States’ obligations towards preparation for re-use and recycling measures and describes the objectives like separate waste collection of certain materials and percentage of waste separately collected. This article also states that derogations in deadlines can be requested by MS which in 2008 recycled less than 5% of their waste, but also that by 31 December 2014 at the latest, the Commission shall examine the measures and the targets with a view to, if necessary, reinforcing the targets and considering the setting of targets for other waste streams. This means that MS should avoid planning infrastructure projects for waste treatment with an excessively high capacity as the EC could easily increase the targets because so far 5 MS have already reached them and more and more officials are keen to state that 60% is easy reachable and cost effective for the EU (60% or above has already been reached by Austria, Germany, Belgium and the Netherlands).

**Second criterion**

A Member State has ensured that its competent authorities establish, in accordance with Articles 1, 4, 13 and 16 of Directive 2008/98/EC, one or more waste management plans as required by Article 28 of the Directive.

This criterion has multiple functions. The goal of this criterion is to develop national waste management plans which will be in accordance with 4 articles of the WFD mentioned in criterion, while this exact criterion represents preamble 1 of Article 28. The waste management plans must set out an analysis of the current waste management situation in the geographical entity concerned, as well as the measures to be taken to improve environmentally sound preparation for re-use, recycling, recovery and disposal of waste and an evaluation of how the plan will support the implementation of the objectives and provisions of this Directive. Waste
management plans have to conform to the waste planning requirements laid down in Article 14 of Directive 94/62/EC and the strategy for the implementation of the reduction of biodegradable waste going to landfills, referred to in Article 5 of Directive 1999/31/EC. This criterion for fulfilment does not contain a deadline for implementation so it can be considered as a precondition for the development of the Operational Programme for environment.

The first article mentioned in the criterion (Article 1) is the general description of the Directive’s purpose where measures are prescribed to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing the overall impacts of resource use and improving the efficiency of such use.

Article 4 of the Directive describes the five-step waste hierarchy which must apply as a priority order in waste prevention and management legislation and policy, and thus also in Operational Programmes. This hierarchy has to be followed firmly, however the article allows Member States to choose the options for certain materials that deliver the best overall environmental outcome. The same article also prescribes the transparent development of waste legislation which will take into account general environmental protection principles of precaution and sustainability, technical feasibility and economic viability, protection of resources as well as the overall environmental, human health, economic and social impacts. Article 13 of the WFD describes the protection of human health and the environment, while Article 16 describes the principles of self-sufficiency and proximity. This article of the WFD touches a very sensitive topic, as MS using Cohesion Funds are often threatened by legal or illegal shipments of waste, which is extremely unpopular among the general.

Third criterion

No later than 12 December 2013, a Member State has established, in accordance with Articles 1 and 4 of Directive 2008/98/EC, waste prevention programmes, as required by Article 29 of the Directive.

The third criterion describes the waste prevention programmes which have to be developed in accordance with the articles of the WFD which describe the general principles of environmental protection and waste hierarchy. This is the criterion whose deadline is set prior to the new budget period (2014–2020) and first criteria with a firm deadline. If the deadline is not met, the EC can start several procedures like taking MS to the European Court of Justice and penalizing those who don’t comply with the WFD. Another penalty could be applied by the EC by blocking EU funds from the Operational Program for Environment. The WFD does not require that this

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7 This may require specific waste streams departing from the hierarchy where this is justified by life-cycle thinking on the overall impacts of the generation and management of such waste. This is for applicable for single material and not applicable for household waste in general.
programme should be developed as a separate part of legislation but it can be a substantial part of the national waste management plans or other legislative documents. The aim of the programme is to break the link between economic growth and the environmental impacts associated with the generation of waste. A list of possible measures is also provided in the WFD.

**Fourth criterion**

The Member State has taken necessary measures to achieve the 2020 target on re-use and recycling in accordance with Article 11 of Directive 2008/98/EC.

Although the first and fourth criteria target the same article of the Waste Framework Directive the fourth criterion aims to ensure that MSs have actually undertaken the measures reported to the EC rather than just reporting on what they have or have not done, as required under the first criterion. Since most of the objectives laid down in this Article present quantitative aims far into the budget period, this criterion is set as very vague and is subject to personal interpretation. However, since these ex-ante conditionalities works as a whole, strict adherence to the waste hierarchy set under criteria 2 and 3 can ensure that MS do not misuse the vague definition of the 4th criterion.

**Organic waste**

The minimum requirements set in the Waste Framework Directive, and as indicated in the ex-ante conditionality criteria do not include organic waste *per se*, however there are several arguments why the separate collection of organic waste is an imperative for the member states. It has to be emphasized that the EU annually produces 90 million tonnes of household biowaste, and that 40% of that mass is still landfilled, which creates an environmental cost despite the high potential added value of the composting or anaerobic digestion of that waste stream. It is a

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significant challenge for the European community to cut this amount by 50% by 2030 as indicated in the Horizon 2020 Framework Programme for Research and Innovation (2014–2020). The general definition of the Waste Framework Directive in the opening preamble point 35 underlines that:

“It is important, in accordance with the waste hierarchy, and for the purpose of reduction of greenhouse gas emissions originating from waste disposal on landfills, to facilitate the separate collection and proper treatment of bio-waste in order to produce environmentally safe compost and other bio-waste based materials.”

The legislation (WFD) also obliges the Commission, after an assessment on the management of bio-waste, to submit proposals for legislative measures, if appropriate. As the Directive was developed in 2008, the European Commission has already started the assessment of biowaste management and conducted a public discussion to assess the need for the biowaste recycling targets. The biowaste consultations were concluded in January 2011 and the next moves by the Commission are expected to occur before the target revisions potentially scheduled for the end of 2014. Another reason for paying special attention to biowaste treatment is that the WFD goals for 2020 for municipal waste cannot mathematically be reached without the obligatory introduction of separate biowaste collection, as biowaste accounts up to 45% of total waste quantities in some Member States. In order to support the proactive active approach set in the Resource Efficiency Flagship and Roadmap, the European Parliament approved a Resolution on a Resource Efficient Europe on 24th May 2012 which requests the European Commission to revise and increase the 2020 goal on 50% of waste reduction, as today five member states already recycle or compost more than 50% of their waste.

Recycling and composting in 2009 of more than 50% of municipal solid waste has already been achieved in Austria (70%), Germany (66%), Netherlands (61%), Belgium (60%) and Sweden (50%). These statistics improved in 2010 where Austria recycled and composted 70%, Belgium and Germany both 62%, the Netherlands 61% and Sweden remained on 50%. Although these countries have already reached the goals of the WFD, the EC has a strict view on the reporting obligations and in 2012 threatened to Belgium for not transposing the WFD into national legislation. This act by the Commission shows the determination of the EU to follow the situation in the countries and willingness to intervene if the legislation is not implemented. In April 2012, the commission requested the European Court of Justice to apply penalties for Bulgaria,

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10 The text of the Directive states that the revision will occur “if appropriate”.


12 EUROSTAT, Environment in the EU27 Landfill still accounted for nearly 40% of municipal waste treated in the EU27 in 2010, news release stat 12/48, Brussels 27 March 2012.
Hungary, Slovakia and Poland at a rate of EUR 67,314 per day.\textsuperscript{13} Today, in contrast to the five states who have already reached the 2020 goals, there are seven countries in the EU who recycle and compost less than 10\% of their wastes and those are mostly CEE countries – the countries which in general are the users of the Cohesion Funds whose policy is to follow the Europe 2020 strategy and therefore the Resource Efficiency Flagship.

\textsuperscript{13} Environment: Commission asks Court to impose financial penalties on four Member States, urges Belgium to comply with EU waste legislation, \url{http://europa.eu/rapid/pressReleasesAction.do?reference=IP/12/422&format=HTML} (21.08.2012)
The waste management hierarchy – main criteria

Waste policy should also aim at reducing the use of resources, and favour the practical application of the waste hierarchy. The Waste Framework Directive sets the so-called 5-steps waste hierarchy which states the following:

“Article 4: The following waste hierarchy shall apply as a priority order in waste prevention and management legislation and policy:
(a) prevention;
(b) preparing for re-use;
(c) recycling;
(d) other recovery, e.g. energy recovery; and
(e) disposal.”

The WFD also stresses that Member States should support the use of recyclates, such as recovered paper, in line with the waste hierarchy and with the aim of a recycling society, and should not support the landfiling or incineration of such recyclates whenever possible. The Resource Efficiency parliamentary resolution\(^{14}\) additionally put more emphasis on the waste hierarchy by calling on the Commission to streamline the waste acquis, taking into account the waste hierarchy and the need to bring residual waste close to zero. The resolution calls on the Commission to make proposals by 2014 with a view to gradually introducing a general ban on waste landfill at European level and for the phasing-out, by the end of this decade, of incineration of recyclable and compostable waste. This should be accompanied by appropriate transition measures including the further development of common standards based on life-cycle thinking. The Roadmap to a Resource Efficient Europe additionally calls on the Commission to revise the 2020 recycling targets of the Waste Framework Directive.

For the CEE countries, there could be a misinterpretation of the hierarchy if the EU 2020 targets are not all looked at together. WFD states that it is important, in accordance with the waste hierarchy, and for the purpose of reduction of greenhouse gas emissions originating from waste disposal on landfills, to facilitate the separate collection and proper treatment of bio–waste in order to produce environmentally safe compost and other bio–waste based materials.

\(^{14}\) European Parliament resolution of 24 May 2012 on a resource-efficient Europe

What can go wrong

The aforementioned *ex-ante* conditionalities are all about the implementation of existing legislation. Can we say, "if only existing legislation would be implemented, than we wouldn't have any issue with Cohesion Policy investments in waste management"? Can full implementation of the WFD prevent Member States from investing in inefficient and unnecessary investments? All these are true, valid and serious questions which depend on the interpretation of the Waste Framework Directive.

One of the most common mistakes in the recovery and disposal level of the hierarchy is the issue of overcapacity of incinerators in Sweden. According to the EUROSTAT details, 36 percent of waste in Sweden is recycled, 14 percent composted and more than 49 percent incinerated, the highest rate in the EU after Denmark (54 percent) and well above the European average (22 percent). As Sweden does not produce enough burnable waste for its energy needs and over dimensioned capacities of incinerators and it has been importing 800,000 tons of waste per year from other European countries including neighbouring Norway. In terms of consequences these issues create unfavourable conditions for increasing the recycling figures, create financial issues for Sweden and decrease air quality levels. One of the things that is emphasised in the WFD is moving the EU closer to a “recycling society”. In that sense, determination of actual recycling rates in CEE countries must be the priority and should be based on official methods and calculations. Therefore, the EC established rules for calculation methods (Commission Decision of 18 November 2011) where four different calculation methods are suggested, depending on the waste fractions which are under consideration. This is especially important to highlight in the countries that are still developing their waste generation reports, usually by national environmental agencies. Such conditions should be prevented in MSs like the Czech Republic, Slovakia, Romania, Poland, Slovenia and Croatia, as those are the countries where most of the issues of overcapacity could occur in the future, whether incineration or MBT. It these cases the EU should prevent, through the Cohesion Policy, financing of treatment capacities in any case where there is suspicion of excess capacity which would threaten the achievement the WFD recycling targets or which would cause unnecessary shipments of waste, thus also breaching proximity criteria.

Another typically foreseen issue for Cohesion Funds users in the future is also the interpretation of the requirement that Member States shall take measures to promote high quality recycling and, to this end, shall set up, by 2015 separate collection for at least the following: paper, metal, plastic and glass. Usually, cities in the aforementioned countries tend to try to fulfil this target

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15 EUROSTAT, Environment in the EU27 Landfill still accounted for nearly 40% of municipal waste treated in the EU27 in 2010, news release stat 12/48, Brussels 27 March 2012
by using the simplest methodology – by installing street containers for the exact materials mentioned in the WFD recycling article. However, as we already elaborated in Chapter 6.4. – separate bio–waste collection and treatment are also necessary in order to reach the overall recycling targets. It has also already been proven scientifically that street containers cannot reach EU 50% targets as their efficiency rarely exceeds 20% of waste diversion17, so the MSs must ensure that door to door separate collection is in place by the 1st January 2015 as this is the only possible methodology for reaching the European 2020 WFD targets. When comparing investments for increasing countries’ overall performance in the waste management sector we cannot assess and compare directly the investment costs for different waste hierarchy levels as it would be a comparison between systemic and technology investments. So the main indicator for evaluation of the investments is the operational costs for each of the hierarchy steps. The running costs for incineration under the BAT where the gas cleaning systems have higher standards than the minimum set by EU legislation are usually between 90 and 195 EUR per tonne of waste treated.18 Costs for MBT depend on the technology chosen and vary between 60 and 120 EUR. High separate waste collection schemes usually cost less than the treatment option19 so they are more economically viable for cities and municipalities. The Cohesion Funds can in this context be evaluated as an incentive and inserted in the calculations of the waste management plans and Operational Programmes of the Member States. There are two financial arguments why Cohesion Funds should not be spent on incinerators or MBT facilities.

a) By incentivising end of pipe solutions (incinerator, MBT or landfill), the running costs of the facility would be reduced and thus would negatively affect the economic viability of separate waste collection.

b) By incentivising the advanced separate waste collection systems (trucks, waste bins, composting facilities, sorting facilities, or AD biowaste facilities) the costs of the system would decrease compared to the end of pipe solutions significantly and thus reduce the overall costs for the public.

The other benefits of incentivising separate collection systems are significantly higher new employment opportunities in local communities (recycling of 10 000 tonnes of waste creates 240 working places, incineration only 40)20. Further, separate collected materials offer new investments in recycling capacities in the regions. Regarding ecological benefits, every tonne of waste recycled or composted creates environmental benefits higher than treatment options. Although the incineration option produces a certain amount of energy, studies show that the energy saved by recycling in the lifecycle of material is significantly higher for every material.21

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17 Favoino, E., Ricci, M., Giro, F., Optimisation and cost assessment of high-capture sorting schemes for compostable waste
19 Costs were analyzed for the Municipalities of Vilafranca d Asti, Cappanorri and Ponte nelle Alpi in Italy which all exceed 50% recycling.
Conclusion

The Cohesion Policy and other strategic documents that give directions on planning and spending the European Structural Funds give absolute priority to the first waste hierarchy steps i.e. prevention, preparation for re-use, recycling and composting, as set in the EU Waste Framework Directive (EC/2008/98).

If a Member State wants to invest in the waste management sector and use EU funds, then it should prepare a national waste management plan and national waste prevention programme which are aligned with EU legislation – and especially in the waste management hierarchy.

This conclusion is backed up by the fact that the Cohesion Policy is geared towards accomplishment of the goals under the EUROPE 2020 strategy, of which the Resource Efficiency Flagship is an integral part and emphasises the need for EU funds to give priority to projects that are prioritised in the so-called waste management hierarchy. In the budget period 2014–2020 the accent is on the accomplishment of the EUROPE 2020 goals. The reason for this approach by the EC came from the real need for better guidance in ensuring the results of both the Waste Framework Directive and the Cohesion Policy.

Waste recycling and prevention can also contribute to the climate goals from the Cohesion Policy by significantly reducing greenhouse gas emissions through lower emissions from landfills and incinerators, production of renewable energy from biowaste treatment and decreasing resource import dependency. Concerning employment, waste recycling and prevention can provide an enormous amount of working places in the EU, a fact that has been emphasised several times by highly positioned officials such as Commissioners Barroso and Potočnik. Thus the smart design of certain policies can drive us towards a more sustainable future.

However, threats that Member States will try to avoid this "roadmap" with an approach that prioritises end-of-pipe solutions such as incineration and landfill do exist, and the EC needs to closely monitor and evaluate regularly the performance of MSs as indicated in the conditionalities. The EC must act promptly if results do not follow or match the results of other MSs or reach the deadlines set in the environmental acquis. As already indicated, the EC has a set of measures which could be used to steer the MSs but at the moment we can only guess how MSs will act in this new context where clear guidance is given prior to the planning of Operational Programmes.
Annex 1. Examples of acceptable projects

This chapter puts forward projects which are in their nature positive towards the environment and compliant with new Cohesion Policy. The main purpose of this selection is to show to citizens and EU funds managing authorities that there is a whole range of projects which could be financed instead of large infrastructure projects such as incinerators or landfills. Often these projects are small in financial scale but its environmental, social and economic benefits are significantly higher. Although a high share of the proposed activities would fall under capacity building; some of the elements of sustainable waste management are also technology investments which have to support the higher waste hierarchy steps.

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<th>Specific activity</th>
<th>Activity description and recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Regulation level</td>
<td></td>
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<tr>
<td>1.1 National waste policy framework</td>
<td>MSs will conduct public discussions, opinion polls and accept public opinions whenever possible in order to develop national waste management plans which include measures which comply with CSF conditionalities in the waste sector. Setting transparent criteria for selection of projects which will be part of Operational Programmes Presenting financing priorities to the public</td>
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<tr>
<td>1.2 Waste policy framework on local level</td>
<td>Development of local waste management plans which can produce and design eligible projects for financing on the national level</td>
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<tr>
<td>1.3 Logistic and operative improvements</td>
<td></td>
</tr>
<tr>
<td>1.3.1 Education of municipal waste company employees, decision makers and citizens</td>
<td>Constant and on-going education is crucial because the EU finances those projects which are considered innovative and in line with</td>
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</table>
current best available practice.

Lagging behind the current best available practices or technologies can have severe consequences, both environmental and financial, for countries, regions, cities and municipalities.

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<tr>
<th>1.3.2 Ongoing monitoring and project preparation for EU financing.</th>
<th>A proactive approach is needed in order to present projects to decision makers and Operational Programme planners.</th>
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</table>

### 1.4 Educational activities

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<tr>
<th>1.4.1 Introduction of environmental education in primary and secondary schools.</th>
<th>To create activities through regular lessons and creation of school curricula with the aim of increasing awareness about environmental issues. Cooperation between waste companies and municipalities and cities in development of educational programmes for environmental protection.</th>
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<tr>
<th>1.4.2 Examples of proactive educational measures</th>
<th>• Recycling instructions delivered door–to–door • Doorstep education • Free bins and bags for waste recycling • Presentations in schools • Promotional advertisements on TV, social networks • Public events and meetings with residents • Seasonal promotion for increasing participation • Regular waste newsletter or sections in local newspapers • Recycling telephone line • Organized visits to recycling centres.</th>
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### 2. Waste landfilling
2.1. **Banning free waste landfilling**

- Scientific papers, but also European practice has shown that it is not sustainable to manage the waste in the places where landfills are the cheapest and economically most appealing option for waste. Most MS already today have introduced so-called waste taxes on waste landfilling, where local authorities pay to the government a tax calculated per tonne of waste landfilled. The taxes in the EU range from EUR 8 to 60, but careful calculations are needed in order to make recycling economically appealing and incentivised.

2.1.1 Regulation of waste fees based on amounts of waste produced.

- Development of fees for waste collection based on the amount of waste produced are the best available tool for stimulating the public to carry out waste recycling and to cover the real costs of the service provided by municipal companies.

2.1.2 Preparation of financial calculations of real costs of waste landfilling or incineration.

- To prepare financial analyses which are needed in order to form the future prices for waste collection services for the public.

2.2 **Banning the landfilling of toxic and hazardous waste**

- This practice is highly dangerous in the long term as it pollutes the environment and acts as a real threat to the underground water basins.

2.2.1 Opening recycling yards for toxic wastes of household origin

- This practice should lower the amounts of toxic and hazardous wastes landfilled on regular landfills mixed with municipal solid waste.

2.3. **Banning and imposing penalties for illegal landfilling and waste incineration on land.**

- There are 2 motives for illegal landfilling or incineration.
  - **Conscious illegal landfilling** as a deliberate act, which can successfully be eradicated by education and adopting a strict penalty system run by the police or other authorities such as the environmental
No time to waste – Cohesion funds programming for a resource-efficient Europe

- **Forced illegal landfill** – as a consequence of social issues (low income). This can be solved with improved information delivery and adapting the fee reductions for socially vulnerable groups.

### 2.3.1 Enforcement of municipal bylaws

Human capacities project in order to enhance the cooperation between municipal workers and police and the environmental inspectorate with the aim of rapid reaction and sanctioning of persons who commit illegal landfilling.

Introduction of eco-patrols by local authorities in order to supervise and advise residents about proper waste management.

### 2.3.2 Undertaking strong educational campaigns

Projects to increase public awareness about ecological and health issues of illegal waste landfilling.

### 3. Separate waste collection

#### 3.1 Introduction of a system of separate waste collection with multiple waste bins in households.

Separate waste collection of waste directly on household’s doorstep is also known as “door-to-door” separate collection which also includes collection of biowaste. Biowaste is especially interesting as by treating it properly, greenhouse gases are avoided in the waste sector. Additionally, by composting or anaerobic digestion of biowaste, the digestate can be used in agriculture as fertilizer. Such an approach is highly recommended in both the EU Landfill Directive (1999/31/EC) and Waste Framework Directive (2008/98/EC). Such an approach additionally ensures the fulfilment of the recycling targets of the WFD.

#### 3.1.1 Development of waste treatment facilities

Cities and municipalities can develop infrastructure projects in order to support a
|  | separate collection system:  
|   | • composting facilities and biogas installations  
|   | • sorting facilities for sorted and unsorted waste  |
| 3.1.2 Ensuring operational infrastructure | Purchase of trucks and bins for separate waste collection  
|   | Software development for tracking waste flows  |

### 3.2 Intensification and development of waste prevention and re-use projects

| 3.2.1 Establishment of re-use centres | Cities and municipalities should introduce services and collection systems which support the work of reuse centres which can redistribute used textiles, books, tools, furniture and appliances which would otherwise become waste.  |
| 3.2.2 Development of local level prevention programmes | Local prevention programmes should identify the possibilities for development of green design, optimization of production processes, introduction of products with less or no packaging etc.  |
This study offers evidence and guidelines for the development of sustainable Operational Programmes in EU Member States in the waste management sector, the sector where most countries in central and eastern Europe seriously lag behind EU standards and achievements.