POLICY BRIEF 20/2016

GOVERNMENT'S ANALYSIS, ASSESSMENT AND RESEARCH ACTIVITIES

Perspectives into topical issues in society and ways to support political decision making

Reaching the waste recycling targets requires significant actions

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There is still a long way to go to reaching the recycling targets

One of the key projects of Juha Sipilä's Government Programme is raising the recycling rate of municipal waste up to 50%. The target is consistent with the recycling targets for municipal waste set in the Waste Framework Directive of the European Union and the Finnish Waste Decree. According to the Waste Framework Directive and the Finnish Waste Decree, the target also involves recovering 70% of construction waste as material. The target applies to construction and demolition waste. Soil and rock materials removed from bedrock or the ground and hazardous waste have been excluded. According to the Waste Framework Directive, the targets should be reached by 2020.

Recycling rate for municipal waste and the recovery rate of construction waste as material in 2012–2014, as well as the targets for 2020

	2012	2013	2014	Target for 2020
MUNICIPAL WASTE	33	33	33	**50%**
CONSTRUCTION WASTE	65	60	58	**70%**

Source: Statistics Finland 2016

RECYCLING
refers to activities, in which waste is used in manufacturing a product, material or substance, either for its original or another purpose; using the waste as energy, in manufacturing fuel or backfilling, or the reuse of products are not considered as recycling waste;

RECOVERY AS MATERIAL
refers to preparation for reuse, recycling and other use of materials, including backfilling, in which waste is used to replace other materials. The term is used in the target for construction waste in the EU Waste Framework Directive. It does not include soil and rock materials.

In 2015, some 2.6 million tonnes of municipal waste and 1.4 million tonnes of building construction waste were generated in Finland.

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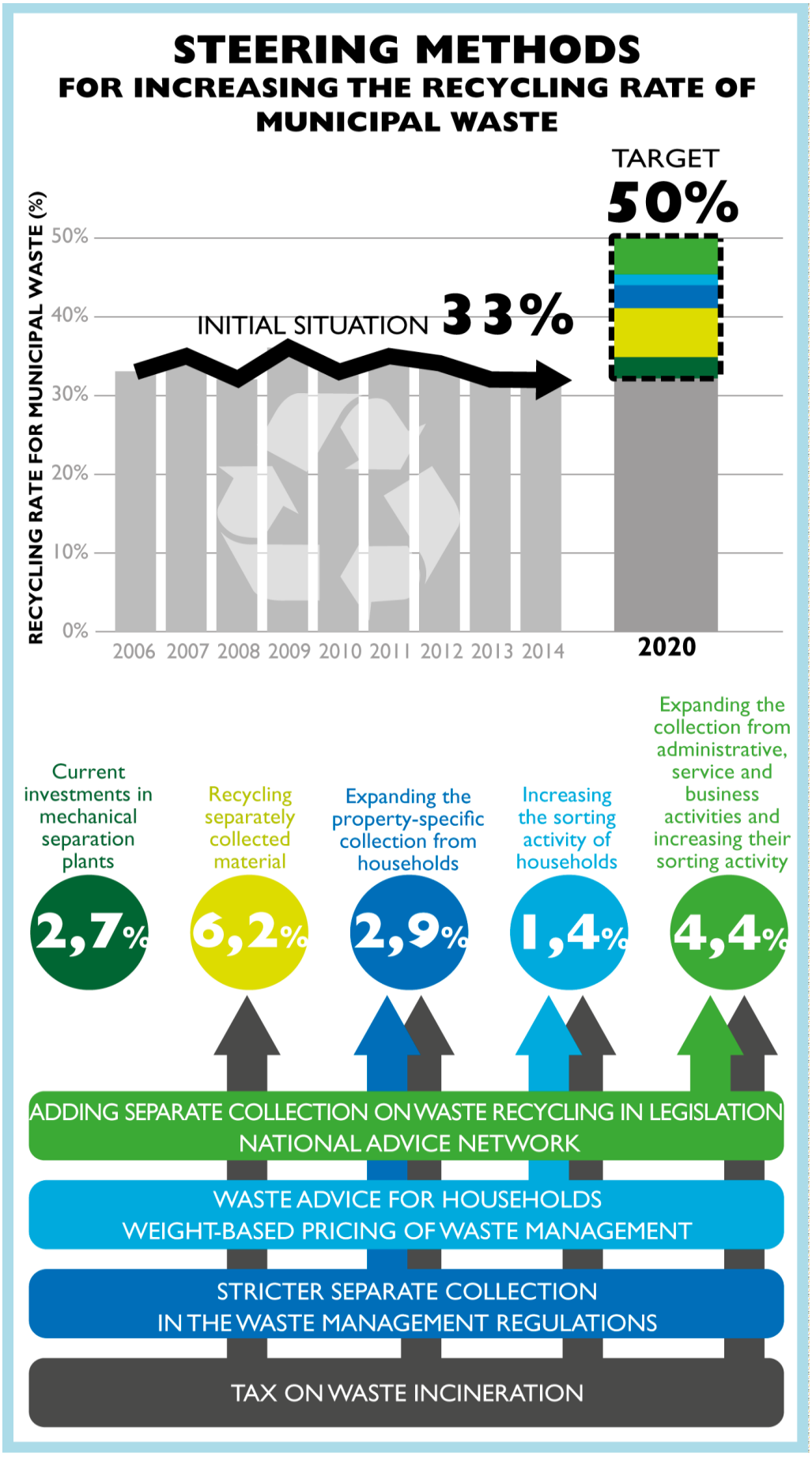
Is it possible to reach the recycling target for municipal waste in Finland?

According to a waste stream model created by the Finnish Environment Institute (SYKE), raising the recycling rate up to 50% requires extremely significant measures regarding the municipal waste from households, as well as administrative, service and business activities.

In order to reach the desired recycling rate, all separately collected material should be recycled. At the moment, a portion of separately collected packaging, plastic and biowaste is directed for use as energy. Directing these materials to recycling would increase the recycling rate by 6.2%. Property-specific sorting options for biowaste, cardboard, glass and metal should be extended to cover all blocks of flats, terraced houses and semi-detached houses in the country. In addition, the residents' motivation to sort waste needs to be supported by developing weight-based pricing and organising advice campaigns, for example.

Recycling the waste from administrative, service and business activities will become more efficient by the same means as: separately collected materials should be recycled instead of being used as energy, the sorting activity increased and the collection system expanded. The recovery of biowaste, plastic and cardboard should increase by up to 30–50% from the current situation, in which case the recycling rate of 50% could be achieved.

In the proposed amendment to the Waste Framework Directive made in the EU circular economy package, an obligation to recycle 65% of municipal waste by 2030 has been presented. According to analysis, it is not possible to achieve such a high recycling rate by improving the efficiency of sorting at the place of origin. At the same time, the share of biodegradable waste suitable for recycling in the waste processed at mechanical biological treatment (MBT) separation plants may remain low due to the usage restrictions in the EU legislation on fertiliser products. MBT plants can separate 10–25% of recyclable plastic, metal and cardboard out of residual mixed waste. This is not enough to achieve the 65% recycling target. Based on calculations, a recycling rate of approximately 60% can be reached, if all of the measures listed above to make recycling more efficient are implemented, and if plastic, metal and cardboard are separated mechanically from all of the remaining mixed waste. In addition, the quality of the separated fractions must be high enough for recycling.


STEERING METHODS
FOR INCREASING THE RECYCLING RATE OF MUNICIPAL WASTE
TARGET
50%
RECYCLING RATE FOR MUNICIPAL WASTE (%)
50%
40%
30%
20%
10%
0%
INITIAL SITUATION 33%
2006 2007 2008 2009 2010 2011 2012 2013 2014
2020
Current investments in mechanical separation plants
2,7%
Recycling separately collected material
6,2%
Expanding the property-specific collection from households
2,9%
Increasing the sorting activity of households
1,4%
Expanding the collection from administrative, service and business activities and increasing their sorting activity
4,4%
ADDING SEPARATE COLLECTION ON WASTE RECYCLING IN LEGISLATION
NATIONAL ADVICE NETWORK
WASTE ADVICE FOR HOUSEHOLDS
WEIGHT-BASED PRICING OF WASTE MANAGEMENT
STRICTER SEPARATE COLLECTION
IN THE WASTE MANAGEMENT REGULATIONS
TAX ON WASTE INCINERATION

New steering methods enable change

Reaching the recycling target of 50% requires the use of several different policy measures and strong, new steering methods at the same time. The necessary methods are focused on the different actors in municipal waste management.

Proposed methods for achieving the target for recycling 50% of municipal waste

Tax on waste incineration for municipal waste

Economic steering is a strong policy method to achieve the desired changes. Among other things, reports by the European Environment Agency have proposed a tax on waste incineration as a steering method to increase recycling in Finland. Of the EU countries, at least Belgium, Austria, France and Denmark levy a tax on waste incineration. At the moment, a large portion of recyclable municipal waste is incinerated, meaning that it is used as energy (combined heat and power). An investigation into issues such as a possible transition period applied to introducing the tax and coordinating the tax with the emissions trading procedure applied to co-incineration is needed. From the perspective of increasing recycling, the tax should be also focused on the co-incineration of municipal waste and waste exported from the country for use as energy in addition to waste incineration.

Introducing stricter municipal waste management regulations

The recycling rate of municipal waste can be increased by introducing stricter obligations for the separate collection of waste in population centres on a property-specific basis. Increasing the collection of recyclable waste from sparsely populated areas does not have any major effect on increasing the recycling rate. The most important types of recyclable waste for increasing the recycling rate are biowaste, plastic, cardboard and paper. The best way to recommend the introduction of stricter obligations on separate collection in municipal waste management regulations is via the national waste plan that is currently being written. Municipalities can issue waste management regulations on collecting the waste under their responsibility. Obligations on the sorting and separate collection of packaging waste can also be issued by municipalities to complement the obligation of organising waste management set on the producers of the packaging. The regulations apply to a significant part of municipal waste, because an estimated 65% of municipal waste is generated at households.

Making the long-term sorting advice to households more effective

According to the Waste Act, the municipality is responsible for providing advice on the waste under its responsibility. However, not all households or individual properties within the scope of separate collection sort their waste. The sorting activity can be increased by influencing the attitudes of the residents. According to the experiences of waste management companies, campaigns alone are not enough to keep up the enthusiasm of households for sorting; long-term advice is also needed.

Weight-based waste management fee system

Sorting activity can be made more efficient by using financial incentives. In the pay as you throw (PAYT) system, you only pay according to the amount of waste produced, with the highest fees paid for unsorted fractions. Many European countries use different PAYT systems. The system may be based on e.g. rubbish bags of different prices, paid in advance, or a dwelling-based weighing of waste. In Finnish properties with multiple dwellings, the housing company pays the waste management fee based on

the volume and emptying frequency of the waste container, and the residents do not see the waste management costs directly. If the aim is to introduce household-specific waste fees based on weight, the current waste collection system needs to be reformed. In fact, different kinds of PAYT systems should be tested in order to find the best method.

Introducing obligation limits for the separate collection of recyclable waste for trade and services in the legislation on waste

In accordance with the Government Programme, an amendment to the Waste Act is currently under preparation in order to reduce the responsibility of municipalities to organise municipal waste management so that it would only apply to waste from households. The municipality can only issue waste management regulations on sorting for the waste under its responsibility. The limitation of responsibility reduces the possibilities to regulate property-specific separate collection of municipal waste from trade and public and private services by municipal waste management regulations. Therefore, provisions on separate collection of municipal waste from service and business activities similar to those set out in municipal waste management regulations would be laid down in the Waste Decree. The regulation would provide the hoped-for support for both the waste producing companies themselves as well as the environmental authorities carrying out the monitoring.

National waste management advice network

The waste advice targeted at administrative, service and business activities could be made more efficient with the help of a national waste management advice network. Waste management companies would also be responsible for their share of the network's funding. The network requires cooperation between the different waste management actors. At the moment, there is no party specifically responsible for giving advice on waste under the waste holder's responsibility.

Key effects of steering methods

Impact assessment indicates the key effects of steering methods. If the decision to implement steering methods is made, the suitability of each measure to Finnish conditions and its environmental, economic and other effects must be evaluated in more detail.

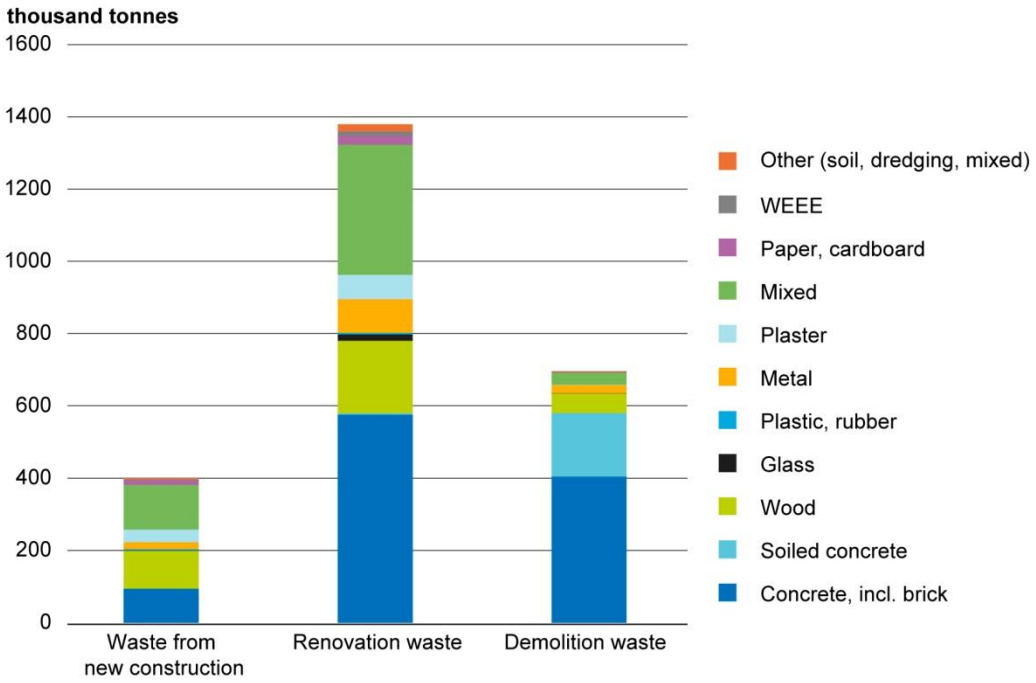
STEERING METHOD	ENVIRONMENT	ECONOMIC	OTHER
Tax on waste incineration for municipal waste	Increases the recycling rate, if the tax applies to both municipal waste exported from Finland for incineration/co-incineration, in addition to the waste to be incinerated/con-incinerated in Finland. New plant capacity is needed for recycling.	Increased tax revenue. Negative effect on municipal economy, if the profitability of significant investments in waste incineration plants made in recent years decreases. Creating the taxation system requires resources. Can create recycling innovations and new business activity.	Creates instability in the operating environment, because in recent years, the steering has also promoted waste incineration. Defining the scope of application for the taxation is a challenge, and its success is a prerequisite for effectiveness. May affect the amounts of other waste/materials incinerated.
Stricter obligation limits on separate collection of recyclable waste in the waste management regulations	According to the model, this may increase the recycling rate by 2.9%. Increases traffic in residential areas with detached houses. Recycling equipment and processing capacity are needed.	Increases the waste collection costs incurred by municipalities/residents. Positive effects on the national economy through increased recycling business.	Applying common obligation limits to different areas is a challenge. Makes the sorting easier for residents of semi-detached and terraced houses, because the collection bins are located at the property.
More effective waste advice for households	Increases the recovery of recyclable waste by a few per cent.	The advice costs are transferred to waste fees.	The municipal waste management, with its fragmented responsibilities, also requires cooperation between municipalities, producers and waste companies concerning advice. More advisers are needed.
Pay as you throw – a weight-based waste management fee system	Increases the recycling rate. Also prevents the generation of waste. Influences the creation of new technological collection systems in waste management. Littering and quality issues with the waste collected for recycling are a minor threat.	The system requires significant investments and increases the costs of waste management. Reduction of mixed waste may decrease the profitability of investments in incineration plants by municipalities. May make the operating conditions of small transport companies more difficult, if they cannot renew their collection equipment. The waste management costs are allocated to households fairly.	May require changes to legislation regarding e.g. waste fees. Building new collection systems and increasing collection services create employment.

Setting obligation limits concerning separate collection of recyclable waste for administrative, service and business activities	Would promote recycling and make the position of different waste producers more equal in sorting.	Depending on the level of obligation limits, may increase the waste management costs of small companies. Supports the business of companies offering recycling services. May increase the costs of monitoring somewhat.	Already carried out as a part of normal customer guidance.

Reaching the construction waste target requires more sorting, a functional recycling market and high quality information

Reaching the target set for the construction of buildings, or recovering 70% of construction waste as material, require additional measures. In order to increase the utilisation of construction waste as material, steering methods that increase the amount of waste directed to recycling and strengthen the market for recycled materials are needed.

Construction waste is created especially in renovations, where the share of mixed waste is significantly higher than in new construction or demolition. In a renovation, planning the sorting of waste in advance and developing the sorting practices is more challenging than in a new construction or demolition, because the sites are very different and the operators are of different sizes, ranging from large renovation companies to individuals doing renovations. However, a demolition with a separation is a requirement for high quality recycled materials.



The most important types of construction waste until now have been concrete and wood waste, as well as the mixed waste mentioned above. Concrete waste is the largest waste

fraction by mass, and it is already being utilised efficiently. The amount of wood waste has diminished significantly in recent years, and at the moment, it is mainly utilised in producing energy. For wood waste, alternative uses to energy with a higher processing degree, such as using it as raw material in composite materials or manufacturing solvents and liquid fuels, should be investigated, because wood is and will continue to be a common construction material in Finland.

In order to increase recovery, additional information is also required on insulation, glass, plastic, metals, ceramics, composite materials, and materials including electrical and electronic equipment. The recovery possibilities of these types of waste need to be investigated, if the aim is to increase their recovery as material.

At the moment, statistics on construction waste are based on the Vahti compliance monitoring data system developed for the needs of environmental monitoring. The Vahti system is known to have data deficiencies concerning the classification and amounts of waste. When the information is recorded, the information on waste is categorised by using a variety of practices, and there are not enough resources to verify the information recorded.

Steering methods proposed for construction waste

Demonstrating the effect of different steering methods on the level of recovery as material is challenging. However, experience on the use of most of the proposed steering methods exists in other countries, and therefore similar effects can also be expected in Finland.

Even though different policy measures and practical measures have been initiated in recent years in order to increase the recovery of construction waste as material, Finland is no pioneer regarding the amounts recovered. In addition, uncertainties exist in the basic information on construction waste, which makes directing the measures more difficult.

Proposals for steering methods to increase the recovery of construction waste as material:

Improving the quality of basic information on construction waste

The information in the shipping documents required by the Waste Act and used in the shipping of waste should be utilised in collecting information and developing the compilation of statistics. The information in the shipping documents in electronic format could be used to assess the amount and quality, and partially, also the treatment, of construction waste. The information could be transferred from electronic shipping documents via open interfaces to the administration's own data systems, such as Vahti. Electronic document system services are already available for companies. In addition, many companies have created their own systems.

Linking different steering methods and the information management on construction waste together is important in increasing recovery as material. Information can be gathered in connection with various administrative procedures, while electronic data transfer takes care of the open information interfaces in systems, the possible overlapping information, and utilising the information for various purposes. The possibilities of utilising the information given in the electronic demolition waste notification that is currently being trialled could also be investigated for developing the basic information.

Pre-demolition audit

Planning the demolition is known to promote the recovery of clean material of uniform quality and the anticipation of amounts of waste to be created, which is also a precondition of the recycling business. In EU discussions, the pre-demolition audit legally required in France, where the recycling potential of different materials is investigated, has been presented as a good example.

A pre-demolition audit or plan focused on the point of view of recycling, regardless of whether it occurs in connection with a demolition permission, a demolition waste notification or a demolition plan, in addition to reporting after demolition, would create a consistent procedure for the sustainable management of material economy at demolition sites. The audit or investigation should focus on the party carrying out the construction project, and in addition to the company, it could also be carried out by a certified consultant.

Instructions for public procurement promoting the use of recycled materials

In many contexts, public procurement has been seen as an important opportunity to promote innovation, circular economy, including environmental considerations in product design, and other environmental and social policy goals. The market for recycled materials could also be significantly strengthened by taking possible recycled materials (such as concrete, bricks, asphalt, soil and rock) into account. The prerequisites for more extensive use include developing procurement competence, sufficient resourcing and education. Instructions are needed to assist the parties carrying out procurements. The instructions would include information about the most important recycled materials and the different ways of strengthening the role of recycled materials in procurement. The instructions can be added to the existing documentation. For example, the use of recycled materials could be considered as one of the criteria to be rated for points in the procurement procedures.

Voluntary agreement to promote sorting at renovation and demolition sites

Large amounts of renovation and demolition waste still end up being incinerated as mixed waste. Developing the sorting at demolition and construction sites requires additional measures. A voluntary agreement procedure should also be introduced in the field of construction in Finland. In such agreements between the administration and the field, the field would commit to promoting recycling. The companies can join the agreement, set targets for themselves and report on reaching the targets. Voluntary material efficiency agreements have been implemented in other EU countries (e.g. the Green Deal in the Netherlands), and they have also been proposed in the Finnish national material efficiency programme.

Key effects of steering methods

Impact assessment indicates the key effects of steering methods. If the decision to implement steering methods is made, the suitability of each measure to Finnish conditions and its environmental, economic and other effects must be evaluated in more detail.

STEERING METHOD	ENVIRONMENT	ECONOMIC	OTHER
Developing the basic information on construction waste – assisted by electronic shipping documents	Improving the basic information promotes recycling indirectly. When the amounts of waste, their composition and origin are known, the steering methods can be targeted more accurately.	Electronic information gathering and management systems, as well as open data, offer new business opportunities. High quality information about waste to be recycled affects the development of the recycling business. Risk for overlapping information gathering systems	Makes decision-making on directing construction waste easier. Monitoring resources can be released for core tasks as electronic information gathering methods develop.
Pre-demolition audit or planning the demolition	Improves recycling opportunities. Planning makes it possible to remove harmful substances from circulation.	In Europe, an inspection such as a pre-demolition audit costs companies a few thousands of euros, carried out by consultants. Causes additional work and costs to parties carrying out the demolition, but may also create savings, e.g. in the improved management of hazardous waste.	Focus as a challenge – does it only apply to large demolition sites? Need for consulting affects employment.
Public procurement	May have a significant effect on reaching the recycling obligations. Requires that waste materials are offered on the market.	Requires competence in the issue from the parties carrying out the procurement. Setting several different targets for public procurement may make procurement processes more difficult. Would create a demand for companies offering recycled materials and encourage innovation.	
Agreement procedure in the field of construction in order to increase recycling	The impact depends on the agreement's scope of application, operating environment, and the number of companies joining it and the extent of their operations. If successful, it can promote reaching the recycling targets and the creation of a recycling market.	Creating the agreement procedure and its monitoring requires resources from both the administration as well as the field and the companies.	Creates new forms of cooperation between the business sector and the authorities. May promote smooth administrative procedures and ease the authorities' burden of monitoring. The existing reporting systems should be utilised in reporting the information.

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Final report: www.tietokayttoon.fi/julkaisut

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