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From Recycling to a Circular Economy

National Waste Plan to 2023

MINISTRY OF THE ENVIRONMENT

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From Recycling to a Circular Economy

National Waste Plan to 2023

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Abstract

The National Waste Plan is a strategic plan adopted by the Government laying down the objectives and measures for waste management and prevention in Finland to 2023.

The target state to 2030 in the Waste Plan is:

1. High standard waste management is part of the sustainable circular economy.
2. Material efficient production and consumption save natural resources and mitigate climate change.
3. Volumes of waste have decreased from the present. Reuse and recycling have risen to a new level.
4. Recycling market works well. Reuse and recycling create new jobs.
5. Valuable raw materials present at low levels are also recovered from recycled materials.
6. Material cycles are innocuous and less and less hazardous substances are used in the production.
7. In the waste sector there is high-quality research and experiments and competence in waste issues is at a high level.

The four key areas in the National Waste Plan are: construction and demolition waste, biodegradable waste, municipal waste, and waste electrical and electronic equipment. Detailed targets have been set for these key areas and measures are presented to reach the targets.

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Tiivistelmä

Valtakunnallinen jätesuunnitelma on valtioneuvoston hyväksymä strateginen suunnitelma Suomen jätehuollon sekä jätteen synnyn ehkäisyn tavoitteista ja toimenpiteistä vuoteen 2023.

Jätesuunnitelman tavoitetila vuoteen 2030 on:

1. Laadukas jätehuolto on osa kestävää kiertotaloutta.
2. Materiaalitehokas tuotanto ja kulutus säästävät luonnonvaroja sekä hillitsevät ilmastonmuutosta.
3. Jätteen määrä on vähentynyt nykyisestä. Uudelleenkäyttö ja kierrätys ovat nousseet uudelle tasolle.
4. Kierrätysmarkkinat toimivat hyvin. Uudelleenkäytön ja kierrätyksen myötä syntyy uusia työpaikkoja.
5. Kierrätysmateriaaleista saadaan talteen myös pieninä pitoisuuksina esiintyviä arvokkaita raaka-aineita.
6. Materiaalikierrot ovat haitattomia ja tuotannossa käytetään yhä vähemmän vaarallisia aineita.
7. Jätealalla on laadukasta tutkimusta ja kokeilutoimintaa ja jäteosaaminen on korkealla tasolla.

Valtakunnallisessa jätesuunnitelmassa on neljä painopistealuetta: rakentamisen jäte, biohajoava jäte, yhdyskuntajäte sekä sähkö- ja elektroniikkalaiteromu. Näille painopisteille on asetettu suunnitelmassa yksityiskohtaiset tavoitteet ja esitetty toimenpiteet näihin tavoitteisiin pääsemiseksi.

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Referat

Den riksomfattande avfallsplanen är en av statsrådet godkänd strategisk plan om målen och åtgärderna för Finlands avfallshantering och förebyggande av uppkomsten av avfall.

I avfallsplanen ingår en målbild för 2030:

1. Avfallshantering av hög standard är en del av den cirkulära ekonomin.
2. En materialeffektiv produktion och konsumtion sparar naturresurser och bromsar klimatförändringen.
3. Avfallsmängden har minskat jämfört med nuläget. Återanvändningen och återvinningen har nått en ny nivå.
4. Marknaden för återvinning fungerar väl. Återanvändningen och återvinningen skapar nya arbetstillfällen.
5. Från återvinningsmaterial kan tillvaratas också små mängder av värdefulla råvaror som förekommer i materialen.
6. Materialkretsloppen är ofarliga och i produktionen används allt mindre farliga ämnen.
7. Den forskning och försöksverksamhet som bedrivs inom avfallsbranschen är högklassig samtidigt som kunnandet i avfallsfrågor är på en hög nivå.

I den riksomfattande avfallsplanen ingår fyra prioriterade områden: byggavfall, biologiskt nedbrytbart avfall, kommunalt avfall samt elektriskt och elektroniskt avfall.

Planen innehåller detaljerade mål för dessa prioriterade områden samt åtgärder för att nå målen.

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Contents

DECISION OF THE GOVERNMENT ON THE NATIONAL WASTE PLAN TO 2023

By proposal of the Ministry of the Environment, the Government has adopted this National Waste Plan to 2023. The Waste Plan presents the target state to 2030 in waste management and the prevention of waste generation and it lays down detailed targets to 2023 as well as the measures to be undertaken in order to achieve these targets.

The plan replaces the National Waste Plan to 2016 adopted by the Government on 10 April 2008 and is in effect until 31 December 2023, or until such time that the next Waste Plan takes effect.

ABSTRACT

The National Waste Plan consists of both a waste management plan and a plan for reducing the quantity and harmfulness of waste and it covers the entire geographical territory of Finland, with the exception of the Åland Islands, who will prepare their own plan.

The National Waste Plan also includes the longer-term target state to 2030 in waste management and to reduce the quantity and harmfulness of waste:

1. High standard waste management is a part of the sustainable circular economy.
2. Material-efficient production and consumption save natural resources and mitigate climate change.
3. Volumes of waste have decreased from the present. Re-use and recycling have risen to a new level.
4. The recycling market works well. Re-use and recycling create new jobs.
5. Valuable raw materials present at low levels are also recovered from recycled materials.

6. Material cycles are innocuous, and less and less hazardous substances are used in production.
7. In the waste sector there is high-quality research and experiments and competence in waste issues is at a high level.

General measures are presented to advance this target state. Four key areas were selected for the Waste Plan and detailed targets and measures were set for these areas, where waste streams will present particular challenges in reducing the quantity and harmfulness of waste and in promoting recycling in the coming six years.

The key areas and the detailed targets set for each are:

1. Construction and demolition waste
- Reducing the volume of construction and demolition waste
- Raising the material recovery rate of construction and demolition waste to 70%
- Increasing the material recovery of construction and demolition waste while managing related risks
- Achieving greater accuracy and correctness in statistics on construction and demolition waste

2. Biodegradable waste
- Halving food waste by 2030
- Recycling 60% of the biowaste included in all municipal waste generated
- Increasing the use of fertiliser products made from recycled raw materials and those are used to replace fertilisers made from virgin raw materials

3. Municipal waste
- Slowing down the growth of the volume of municipal waste relative to GDP and achieving relative decoupling
- Recycling 55% of municipal waste
- Increasing the recycling of packaging waste (at least to the target level in the Waste Framework Directive under consideration)

4. Waste electrical and electronic equipment (WEEE)
- Prolonging the lifespans of electrical and electronic equipment (EEE) and increasing their utilisation rate
- Reducing the share of WEEE in mixed waste and boosting its recycling
- Reclaiming and recycling critical raw materials and valuable materials in WEEE more effectively
- Removing harmful substances in WEEE from circulation
- Stepping up the supervision of the exports of used EEE and WEEE

The central impacts of the National Waste Plan have to do with increased sustainable and safe use of resources and the advancement of environmental protection. Implementation of the plan will have a positive effect on the development of waste volumes and the level of recycling. The measures in the Waste Plan will heighten environmental awareness and expertise relating to the circular economy and waste. Realisation of the plan will also create conditions and opportunities for introducing new circular economy approaches and economically viable business concepts.

The Waste Plan was prepared in broad cooperation with the various ministries and stakeholders. The measures under the plan will be implemented within the framework of the general government fiscal plan and the Budget. Any financing needs will be addressed separately in the general government fiscal plan and budget processes.

1. Introduction

From Recycling to a Circular Economy – National Waste Plan to 2023 is the strategic plan of the national targets and measures in waste management and to reduce the quantity and harmfulness of waste required under the EU Waste Framework Directive (2008/98/EC). The plan consists of both a waste management plan and a plan for reducing the quantity and harmfulness of waste and it covers the entire geographical territory of Finland, with the exception of the Åland Islands, who will prepare their own plan.

The Ministry of the Environment was responsible for the preparation of the Waste Plan while the Finnish Environment Institute SYKE dealt with the practical elaboration of the plan. The Strategic Cooperation Group for the Waste Sector appointed by the Ministry of the Environment acted as the steering group. A broad-based group of experts and stakeholders also took part in the planning, during which several workshops and stakeholder events were held to allow stakeholders to contribute to the contents of the Waste Plan.

The National Waste Plan required under the Waste Framework Directive and the Finnish Waste Act consists of two publications. This publication, *From Recycling to a Circular Economy*, constitutes the strategic element of the National Waste Plan to 2023. The background report to the Waste Plan was published earlier (The Finnish Environment 3/2017). A separate memorandum has furthermore been prepared on the Waste Plan's environmental impact assessment (http://www.ym.fi/en-US/The_environment/Waste/The_National_Waste_Plan).

Four key areas were selected for the Waste Plan: construction and demolition waste, biodegradable waste, municipal waste, and waste electrical and electronic equipment (WEEE). These were selected as the key areas because their waste streams will present particular challenges in reducing the quantity and harmfulness of waste and in promoting recycling in the coming six years. Packaging waste is addressed as a part of municipal waste even though not all packaging waste is included in municipal waste. While all steps to improve waste management also prevent litter pollution, specific litter prevention measures are presented in the section of Chapter 4 outlining the general measures to achieve the target state.

From Recycling to a Circular Economy – National Waste Plan to 2023 includes the target state to 2030 (Chapter 2), capacity requirements and capacity location criteria, (Chapter 3), targets and measures to reduce the quantities of waste and to develop waste management (Chapter 4), as well as the planning process and key impacts of the Waste Plan (Chapter 5) and a plan on the organisation of monitoring (Chapter 6).

The targets and measures aim to control the rise in waste quantities and to boost recycling. A further aim is materials cycle safety. The Waste Plan includes the key means and those deemed most effective in preventing the generation of waste. The plan presents financial and administrative policy instruments, as well as a range of voluntary tools such as promotion of research and development, information and communications, and agreements and approaches for the business community. The key principles of the Waste Framework Directive (2008/98/EC), including the principles of self-sufficiency and proximity and the order of priority in waste management, have been taken into account in the targets and measures in the Waste Plan.

This National Waste Plan remains in effect until the end of 2023 or until the following waste plan takes effect. The target state in the plan is set for 2030 and the target state may be reviewed as necessary upon preparation of the new plan. The National Waste Plan to 2023 replaces the earlier national waste plan (*Towards a recycling society – National Waste Plan to 2016*, The Finnish Environment 32/2008).

Once the Government adopts the plan, the measures under the National Waste Plan become binding on central government. Issues vital to the achievement of the targets, which Finland should promote in discussions at the EU level, are presented as a part of the central government measures. The plan also presents measures suggested during the planning phase for actors other than central government, such as enterprises, NGOs and local government. While these suggested measures promote the achievement of the targets, actors in the sector are free to utilise also other tools to promote their achievement.

In order for the targets to be achieved, the central government measures must be implemented in a comprehensive manner. The achievement of the targets also calls for broad commitment and cooperation from all parties active in the sector.

The measures under the plan shall be implemented within the framework of the general government fiscal plan and the Budget. Any financing needs will be addressed separately in the general government fiscal plan and budget processes.

2. Target state to 2030

The targets in waste management often extend beyond the six-year waste plan horizon. The planning entailed envisioning the target state to 2030 in reducing the quantity and harmfulness of waste and in waste management. The background report lists strategies and plans which were taken into account inasmuch as possible in preparing the National Waste Plan. The Waste Plan will steer Finland towards a circular economy only in respect of waste management; measures far beyond those presented in the Waste Plan will also be required.

FINLAND'S TARGET STATE TO 2030 IN WASTE MANAGEMENT AND IN REDUCING THE QUANTITY AND HARMFULNESS OF WASTE IS:

1. High-standard waste management is a part of the sustainable circular economy.
2. Material-efficient production and consumption save natural resources and mitigate climate change.
3. Volumes of waste have decreased from the present. Re-use and recycling have risen to a new level.
4. The recycling market works well. Re-use and recycling create new jobs.
5. Valuable raw materials present at low levels are also recovered from recycled materials.
6. Material cycles are innocuous, and less and less hazardous substances are used in production.
7. In the waste sector there is high-quality research and experiments and competence in waste issues is at a high level.

3. Waste management capacity needs and location criteria

3.1 Waste treatment needs

Although the transition to a circular economy will largely take place through changes in production and consumption habits, there is also a need for investments in preparing for re-use and waste treatment. New and innovative, technically and economically viable facility solutions must be introduced in order to increase the safe and high-standard recycling of waste. Expanding and developing a separate collection network is essential to obtaining clean waste for recycling. The appropriate disposal of waste fractions for which cost-effective recycling options have yet to be identified must also be secured.

Preparing for re-use and pre-processing

The need for additional capacity in preparing for re-use may grow in the near future as the number of circular economy approaches rises. Capacity needs cut across several product groups and sectors. Many opportunities have been identified in preparing for the re-use of e.g. discarded construction materials and products, WEEE, packaging and textiles.

CONSTRUCTION AND DEMOLITION WASTE

- Need for re-use centres
- Sorting at place of generation must be increased
- Need for sorting facilities
- Need for innovation in treatment of waste containing organic material
- Need to treat waste fractions containing harmful substances

Additional pre-processing capacity is required in respect of waste from which parts are still recyclable and waste which cannot be landfilled due to the restriction on the landfilling of organic waste. Such waste includes, for example, certain types of construction and demolition waste as well as dry materials in municipal waste (e.g. cardboard, plastic). Pre-processing is also required for waste which contains certain harmful substances in order to allow a safer and higher standard of recycling.

Two sorting facilities which process not only construction and demolition waste but also mixed municipal waste came on stream in 2016: a mechanical biological treatment facility in Riihimäki and a mechanical treatment facility in Päijät-Häme. A mechanical biological pre-processing facility is also planned for Oulu. Neither national fertiliser product legislation nor the upcoming EU regulation of fertiliser products permits organic material mechanically separated from mixed waste to be used as a raw material for fertiliser products. Consequently, mechanical biological facilities provide little support in achieving the municipal waste recycling target (the separately sorted biodegradable component does not count towards recycling). Nonetheless, mechanical sorting may be of relevance in the separation and recycling of dry or washable materials, for example plastics.

Biological treatment

There is a need for additional biogas facility treatment capacity in areas with much agriculture and food industry. Biogas facilities in particular are needed to treat manure and green waste generated at farms. These could be either farm-specific facilities or facilities shared by several farms.

Further additional municipal biowaste treatment capacity will be required to achieve the recycling targets. Parts of the network of municipal composting plants built in Finland since the 1990s are approaching the end of their useful life. Existing composting plants will be replaced with new biogas facilities or other more advanced treatment technologies. Composting often remains mere post-treatment at biogas facilities.

BIODEGRADABLE WASTE

- Need to introduce advanced biowaste treatment processes
- Need for advanced treatment facilities in areas with food industry and agriculture
- Need to increase advanced biowaste and municipal sewage sludge treatment capacity

Many areas also need additional capacity in the treatment of municipal sewage sludge. At present, there is not always demand for the end product of sludge treated primarily through decomposition and composting. The markets and processing technologies (e.g. separation of nutrients from sludge) should be developed or otherwise a treatment with lower priority under the order of priority in the Waste Act, i.e. energy recovery, will have to be adopted.

Energy and climate policy aim to increase the production of waste-derived biofuels. The objectives of both waste and climate policy can be accomplished in the production of biofuels, providing that both objectives are taken into account in the practical implementation.

Other recycling

Additional capacity and new innovations are needed in the recycling of various kinds of plastic waste. Technically and economically viable recycling methods should be innovated for mixed waste containing organic material, or at the very least pre-processing methods to allow their preparation for recyclability. Additional investment would be required in developing the recycling of WEEE by means of new and innovative processing methods.

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

- Need to increase re-use and reconditioning
- Need for separation of components containing brominated flame retardants
- Need for innovation in improving the efficiency of reclaiming rare and valuable materials

Energy recovery

Additional capacity is needed for energy recovery in certain specific sectors, such as healthcare waste, PVC waste and sieved waste from car crushing facilities. The permits of waste-to-energy plants do not at present permit the incineration of these fractions to a sufficient degree.

Waste incineration plants in Finland are fairly new and there is sufficient capacity for the incineration of municipal waste (see Chapter 3.2). However, the restriction on the landfilling of organic waste has changed the need for treatment, which gives rise to a need for the construction of one plant in Finland for commercial waste and the aforementioned special wastes. This would allow exports to be reduced.

In the context of planning new waste incineration plant investments, account should be taken of the potential for increased recycling. As recycling increases, changes in the nature of the incinerated waste and the reduction in its quantity may give rise to changes in the needs for waste incineration capacity. This should be taken into account when planning any new incineration plants.

Landfills

Landfilling has declined markedly since the restriction on the landfilling of organic waste took effect. The current landfill capacity will be sufficient long into the future. The organic waste landfilling restriction has also made it impossible to deposit certain types of waste in landfills (e.g. mineral-, glass-, pulp- and rock- wool waste). These types of waste are also undesirable at waste incineration plants because they lack heat value, their incineration is cumbersome or it is not allowed under the plant's environmental permit. New kinds of ways to reduce and process waste of this kind should be developed.

3.2 Municipal waste facility capacity need in 2023

Two scenarios for different waste volume development have been prepared for the need for municipal waste facility capacity. These scenarios account for the recycling targets to 2023 put forward in this plan for municipal waste (55%) and biowaste (60%).

Table 1. Municipal waste treatment volumes in 2015 and estimates of treatment needs to 2023 based on the recycling targets in the Waste Plan

	2015	Waste quantity scenarios 2023	
		Level of 2015	Moderate growth waste quantity forecast
Total waste quantity / waste quantity estimates (1 000 t)	2 738	2 738	2 947
Recycling (biowaste included)	1 095	1 506	1 621
Biological treatment	329	510	549
Need for additional capacity in biological treatment	-	**181**	**220**
Other recycling (excluding biowaste)	767	996	1 072
Need for additional capacity in other recycling	-	**229**	**305**
Energy recovery	1314	1095	1 179
Landfilling	301	137	147

The first scenario makes use of the waste volumes in 2015 as indicated in the waste statistics. The scenario presumes that the generation of waste has been successfully halted at the level of 2015. The second scenario makes use of the moderate waste quantity growth forecast to 2023 of the Forecasting waste volumes -project[1], in which future municipal waste quantities were modelled.

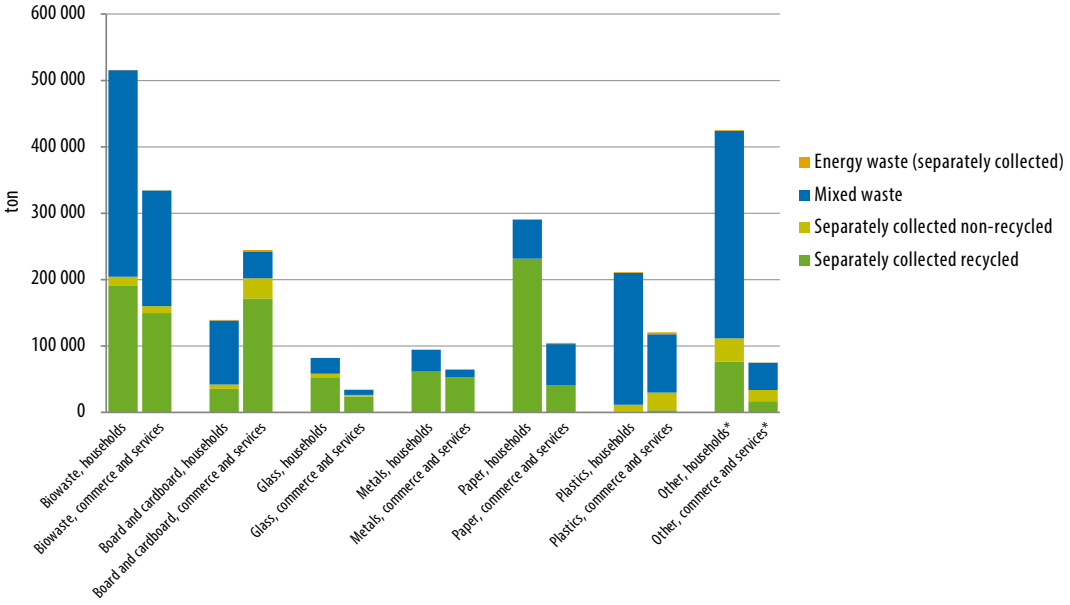
Taking into account the recycling targets, the need for additional capacity in the biological treatment of municipal waste would be approximately 180 000 – 220 000 tonnes. This is equal to building 3–4 new facilities of the same size as the biogas facility of Helsinki Region Environmental Services Authority HSY. Additional treatment capacity of 200 000 – 300 000 tonnes is needed for other recyclable municipal waste. The treatment of plastics in particular, and also fibre packaging to some extent, needs additional capacity. The increased recycling of low volume wastes, such as textiles, may also be necessary to raise the overall recycling rate. The need for energy recovery capacity in respect of municipal waste is estimated to be 1 100 000 – 1 200 000 tonnes. The need for landfilling will decline to 140 000 – 150 000 tonnes, meaning that 5% of all municipal waste generated would be landfilled.

The estimated need for biological treatment capacity (Table 1) only applies to the treatment of municipal waste. In reality, Finland will need considerably greater biological treatment capacity to manage the biodegradable waste streams from various industries.

In 2017, there were nine waste incineration plants in operation in Finland and they had a combined annual incineration capacity of approximately 1 595 000 tonnes. The municipal waste energy recovery project for which municipalities were responsible remains underway in Salo. The volume of mixed municipal waste in 2015 was 1 268 259 tonnes. In addition to municipal waste, the incineration plants also incinerate an estimated 10–20% of commercial and industrial energy waste, but without commercial waste, the current waste incineration capacity would be sufficient to treat all mixed waste generated in Finland.

1 Salmenperä H., Moliis K., Nevala S-M. 2015. Jätemäärien ennakointi vuoteen 2030 [Forecasting waste volumes to 2030]. Reports of the Ministry of the Environment 17/2015. Ministry of the Environment. Environmental Protection Department. Helsinki 2015. ISSN 1796-170X, ISBN 978-952-11-4444-8. Available [in Finnish]: http://hdl.handle.net/10138/155189

Figure 1. Composition, collection and recycling of municipal waste in 2015



* The category "Other, households" includes households' mixed and energy waste wood component, WEEE, hazardous waste and the miscellaneous component. The category further includes 92.5% of separately collected WEEE, municipal wood waste except for wood packaging, batteries, hazardous waste, textiles and 70% of miscellaneous municipal waste such as sewer cleaning waste.

* The category "Other, commerce and services" includes commerce and services' mixed and energy waste wood component, WEEE, hazardous waste and the miscellaneous component. The category further includes 6.5% of separately collected WEEE, wood packaging, waste generated in open-air market commerce, and 30% of miscellaneous municipal waste such as sewer cleaning waste.

3.3 Treatment facility location criteria

The locations of the premises needed for a circular economy and of waste treatment facilities are primarily driven by the need for treatment capacity and the willingness to invest, and also by the principle of proximity. The circular economy and industrial symbioses encourage the centralisation of waste treatment functions to allow synergies to be achieved among the various actors. Finland occupies a large geographical area and establishing treatment facilities at the point of generation of low waste streams is not warranted. Parties which are considering new treatment facility investments must be certain that there will be sufficient waste for treatment in the area, that the waste can easily be transported to the treatment facility, and that there will be local demand for the outputs of the treatment facility (e.g. locating a waste incineration plant in the vicinity of the district heating grid to obtain higher efficiency).

On a more general level, the location of waste treatment facilities is steered by urban planning. The placement of facilities which require an environmental permit can also be managed in the context of environmental impact assessment and during the permit process. In urban planning, adequate areas for circular economy needs and treatment services in waste management should be earmarked sufficiently close to the places where side streams and waste streams are generated.

4. Targets and measures in the National Waste Plan to 2023

This Chapter presents the targets and measures in the National Waste Plan, starting with general measures towards achieving the target state (Chapter 2) and followed by targets and measures broken down by the four key areas selected. Each measure indicates who is/are responsible for it under the current status quo. Some adjustments have been made to cater for the upcoming regional government reform, after which responsibility will rest with those having competence in the matter at that time. The party or parties with main responsibility are indicated in bold font and the most important parties in cooperation are listed thereafter. Amendments to six Directives in the waste sector are currently under consideration in the EU and have progressed to tripartite negotiations among the Parliament, Council and Commission. Every effort has been made to take into account the reform of the Waste Framework Directive in the drafting of the Waste Plan. However, the reform may affect the target levels of e.g. municipal waste and packaging waste. The measures always aim at least to achieve the targets of the Waste Framework Directive.

General measures towards achieving the target state

1.1 Creating a new waste information system to improve waste traceability and statistics compilation

A new system is necessary to improve the quality of the waste statistics and to identify material cycles for the needs of a circular economy. The amendments to the Directives in the waste sector under consideration in the EU will require new kinds of electronic tracking methods to monitor waste traceability, especially in respect of hazardous waste.

Responsibility: **Ministry of Finance, Ministry of the Environment,** Statistics Finland

Timetable: 2017–

1.2 Establishing an online marketplace for waste and side streams

The aim of the marketplace is to increase recycling and reduce the generation of waste. The goal is for the marketplace initially to be capable of transparently demonstrating the lack of market required for municipalities to make use of the supplementary responsibility service. The Ministry of the Environment is exploring the potential for marketplace establishment together with its partners.

Responsibility: **Ministry of the Environment, Ministry of Economic Affairs and Employment, Finnish Competition and Consumer Authority**, The Finnish Innovation Fund Sitra, Motiva Oy

Timetable: 2017–

1.3 Introducing voluntary agreements between central government and enterprises in the various industries

The Ministries and enterprises in the various industries/industry organisations enter into voluntary agreements to promote material efficiency and recycling. The Finnish Commerce Federation, for example, has entered into Society's Commitment to Sustainable Development with the Ministry of the Environment in a Green Deal to reduce the use of plastic bags. Material efficiency commitments are currently under preparation with more than one sector of industry.

Responsibility: **Ministry of the Environment, Ministry of Economic Affairs and Employment, Ministry of Social Affairs and Health, Ministry of Agriculture and Forestry, Prime Minister's Office,** Motiva Oy, industry organisations, enterprises

Timetable: 2017–

1.4. Ensuring the funding of material audits and their expansion to new sectors

The material audit for enterprises developed by Motiva Oy translates in practice into smart raw material choices and their economical use, effective side stream control and reducing the amount of waste. The effectiveness of material audit activities will need to be assessed and both funding and the activities will need to be developed in accordance with the findings of the assessments. Promoting the prevention of waste generation should be a particular area of development. The audits should also be expanded into sectors where they are yet to be implemented.

Responsibility: **Ministry of Economic Affairs and Employment**, Ministry of the Environment, Motiva Oy

Timetable: 2017–

1.5 Government undertakes to reduce the quantity and harmfulness of waste in its activities

Government should set an example for private actors and the various sectors. Targets in reducing the quantity and harmfulness of waste could involve e.g. shared use of premises, zero-waste policies in activities and events. The government measures and targets could be determined by means of Society's Commitment to Sustainable Development or as a part of environmental management systems.

Responsibility: **Prime Minister's Office,** ministries, counties, municipalities

Timetable: Ongoing

1.6 Public organisations will acquire environmentally sustainable products and solutions

The revised Public Procurement Act will increase the potential to make use of environmental and social considerations in procurements. The environmental targets will be advanced in procurements through the development of guidelines and criteria on topics including the use of recycled materials, waste volumes in production, product quality and sustainability, recyclability of products or their components after use, and material efficiency. Advisory organisations for various kinds of procurements will be aggregated into a networked centre of excellence in order to enhance procurement expertise and develop new approaches. See measure 2.2.

Responsibility**: Ministry of Economic Affairs and Employment, Ministry of the Environment,** Ministry of Finance, Ministry of Transport and Communications, parties responsible for public procurement, Nordic Swan Ecolabel and EU Ecolabel

Timetable: 2018-

1.7 Fostering understanding of and ability to apply the fundamentals of the circular economy in the curricula of basic, secondary and tertiary education

Schools have adopted phenomenon-based learning and the theme of the circular economy dovetails well with this educational approach. The circular economy requires a change in mindset throughout society, and its precepts should therefore be included in education at all levels.

Responsibility: **Ministry of Education and Culture,** Finnish National Agency for Education, municipalities, universities of applied sciences, universities

Timetable: 2018–

1.8 Exploring the potential for implementing and funding a national waste advisory service for enterprises

Advisory services are needed for enterprises and other parties not covered by the advisory responsibility of municipalities in order to achieve the recycling targets and the targets of reducing the quantity and harmfulness of waste. Municipal responsibility for waste management has already declined and will continue to decline when the Waste Act amendment in the programme of Prime Minister Sipilä's Government is adopted. The potential for funding the advisory service will be explored and the advisory service will be established if the exploration comes out in favour of such an outcome.

Responsibility: **Ministry of the Environment**, Ministry of Economic Affairs and Employment

Timetable: 2020–

1.9 Intensifying regard to material efficiency in environmental permits

This target appeared also in the previous national waste plan. A guide for the permit authorities has been prepared on the topic, yet estimates indicate that regard to material efficiency could further be intensified. The permit authorities should be provided with training on the topic and once the material audit expands to new sectors, the audit could be used in the context of environmental permit issue and monitoring as verification of consideration for material efficiency.

Responsibility**: Ministry of the Environment,** Regional State Administrative Agencies, Centres for Economic Development, Transport and the Environment (ELY Centres), municipalities

Timetable: 2018–

1.10 Determining the requirements of the circular economy in urban planning and preparing a set of guidelines for urban planners

Urban planning must take into account the earmarking of areas for the circular economy and waste management so that re-use, recycling and reclamation can be accomplished sufficiently close to the locations where the material is generated and used. Sufficient areas for regional residents' waste collection points should also be set aside in densely populated areas.

Responsibility: **Ministry of the Environment,** counties, municipalities, developers

Timetable: 2017–

1.11 Studying the effectiveness of the restriction on landfilling of organic waste and possible further measures to direct recyclable waste away from landfilling

The current restriction on the landfilling of waste containing organic materials has only been in effect for a short time. The aim of the restriction is to reduce environmental loading arising from ordinary waste at landfills and to encourage the recycling and other recovery of waste and the development of new waste treatment methods. Positive developments as well as any problems arising from the landfilling restriction will be studied. The results of the study will be used when assessing needs for Decree amendment and further regulation to restrict the landfilling of recyclable waste.

Responsibility: **Ministry of the Environment**, Finnish Environment Institute SYKE, waste treatment entities, permit and supervisory authorities

Timetable: 2017–

1.12 Studying the sources of litter pollution in the land environment and its passage on land and into waterways

The programme of measures for achieving a good environmental status in marine waters and the project under it to curtail the littering of the sea and beaches focuses on littering in the maritime environment (e.g. "Roskat pois" anti-littering project). Additional studies will be required on litter pollution in the land environment and the passage of litter, and also on microplastics. Plans on possible monitoring needs and measures to prevent litter pollution will be prepared on the basis of the studies.

Responsibility: **Ministry of the Environment,** municipalities, Association of Finnish Local and Regional Authorities, NGOs

Timetable: 2020–

Influencing EU policies

1.13 Participating in the process of developing the EU Commission's Green Public Procurement recommendations to promote consistent criteria and policies in support of the recycling and re-use of products and materials

Responsibility: **Ministry of the Environment**

Timetable: 2018–

Construction and demolition waste

Target 2: Reducing the volume of construction and demolition waste

Measures:

2.1 Introducing a voluntary agreement procedure in the construction industry to increase material efficiency in building construction, renovation and demolition works and to improve the waste type-specific sorting as provided in the Waste Decree

See measure 1.2.

Responsibility: **Ministry of the Environment,** Ministry of Economic Affairs and Employment, Confederation of Finnish Construction Industries RT, Motiva Oy, Finnish Real Estate Federation, Association of Finnish Local and Regional Authorities, Senate Properties

Timetable: 2020–

2.2 Preparing a set of guidelines for public procurement entities on building construction, renovation and infrastructure construction that is material efficient and supports the circular economy

Information guidance could promote material efficiency, the use of secondary materials and demolition audits of buildings, as well as the recycling of construction and demolition waste. Public procurement entities should not prevent but rather encourage the tendering of recycled materials in public constructions projects put out to tender. The Ministry of the Environment issued in 2017 a set of guidelines for green public construction projects on the basis of the European Commission's recommendations, and these general guidelines will provide the basis for drafting material efficiency criteria for public construction projects.

Responsibility: **Ministry of the Environment**, Prime Minister's Office, Ministry of Economic Affairs and Employment, Motiva Oy, Association of Finnish Local and Regional Authorities, municipalities, Confederation of Finnish Construction Industries RT

Timetable: 2018–

2.3 Launching pilot projects and pilot areas where more material-efficient practices are applied and a high recycling rate is pursued

Ambitious targets for the prevention, sorting and recycling of construction and demolition waste will be set for regional renovation or construction projects currently underway or under preparation. The best available expertise and technology is to be integrated into the projects, industry practices are to be developed and new business is to be launched.

Responsibility: **Ministry of the Environment**, Housing Finance and Development Centre of Finland ARA, municipalities

Timetable: 2018–

2.4 Ensuring the incorporation of the fundamentals of material efficiency and the circular economy in education and training in the construction sector

The potential for incorporating the fundamentals of material efficiency and the circular economy in the curricula will be assessed and recommendations prepared on the training of education planners at vocational colleges and universities. The recommendations will define, for instance, the relevance of the sustainable development targets of Article 46 of the Professional Qualifications Directive in the education of architects from the material efficiency perspective. The introduction of the circular economy open study modules under preparation at The Finnish Innovation Fund Sitra will be supported.

Responsibility: **Ministry of Education and Culture**, **Finnish National Agency for Education**, The Finnish Innovation Fund Sitra, SYKLI Environmental School of Finland, Construction Industry Education Center RATEKO, vocational colleges and universities

Timetable: 2018-

Suggestions for other actors

2.5 Developing and intensifying the activities of recycling centres for construction products and components in municipalities

Re-use chains and the delivery of serviceable construction products and components for re-use in relation to renovations carried out by municipalities will be developed by means of e.g. recycling centres or workshops. The networking of recycling centre operators and the channelling of their sales to digital systems will be augmented.

Responsibility: **municipalities,** recycling centres, demolition enterprises, associations and organisations

2.6 Continuing the development of repair, demolition and adaptability criteria for designers

The recyclability of construction products and components will be optimised and waste generated in renovation and demolition will be minimised already at the building design and construction phase.

Responsibility: **Building Information Group, Finnish Association of Architects, Finnish Association of Consulting Firms SKOL**

2.7 Increasing the efficiency of national advisory services to support material efficiency and recycling in construction

See measures 1.8. and 2.1.

Responsibility: **Motiva Oy,** Ministry of Economic Affairs and Employment, Ministry of the Environment

Target 3: Raising the material recovery rate of construction and demolition waste to 70%

Measures

3.1 Creating waste type-specific plans for the main types of construction and demolition waste to intensify material recovery

The recycling potential of various waste materials will be studied and the results of the study will provide the basis for formulating plans to intensify the material recovery of main waste fractions in Finland. This will support the principles of self-sufficiency and proximity in waste management.

Responsibility: **Ministry of the Environment,** Ministry of Economic Affairs and Employment, Finnish Environment Institute SYKE

Timetable: 2018-

3.2 Conducting country benchmarking on the functioning of construction material recycling markets in countries with high recycling rates

Other European countries will be studied for best practices and these will be benchmarked against Finnish practices. A market analysis will be conducted and the role of public procurement in market development will be studied. (Comparison countries might include e.g. Denmark, the Netherlands, Germany, Sweden)

Responsibility: **Ministry of Economic Affairs and Employment,** Ministry of the Environment

Timetable:2018-

3.3 Enhancing the use of online construction and demolition waste notifications

The use of the online construction and demolition waste notification to be filed in connection with building permits will be enhanced and expanded. The notification will be made more functional and user-driven. Guidelines on waste sorting, appropriate waste management and recycling at construction sites will be integrated into the notification. The use of the online marketplace related to the notifications will be promoted.

Responsibility: **Ministry of the Environment**, *municipalities, developers*

Timetable: 2018-

3.4 Intensifying the utilisation of industrial symbioses in the recycling of material flows in construction

A project to efficiently utilise the material flows of regional industrial processes and construction will be implemented in a few urban regions. The potential requirements for launching new business will be identified and the creation of new business will be supported.

Responsibility: **Ministry of the Environment,** *municipalities, developers; Motiva Oy*

Timetable: 2018–

Influencing EU policies

3.5 Developing procedures consistent with the internal market regulations on recycled construction products

Finland will participate in the development of the EU internal market regulations on recycled construction products in terms of the re-use of construction components and materials, with regard to e.g. the basic requirements applied to products to be placed on the market and their CE markings, in cooperation with industry actors and the authorities.

Responsibility: **Ministry of the Environment,** Ministry of Social Affairs and Health

Timetable: 2018–

Target 4: Increasing the recovery of construction and demolition waste while managing related risks

Measures

4.1 Determining the need and requirements for national End of Waste (EoW) criteria for construction and demolition waste

Safe and appropriate uses may be available for certain types of waste. The EoW criteria approved in the EU have not been used and the drafting of national criteria shall therefore be examined also from the necessity perspective. Reform of the waste Directives may result in changes also to the application of the EU EoW criteria.

Responsibility: **Ministry of the Environment,** Finnish Environment Institute SYKE

Timetable: 2017–

4.2 Encouraging municipalities to appoint a coordinator for the recovery of surplus soil and waste materials generated in construction

The lack of coordination has represented a bottleneck in the recovery of surplus soil. The coordinator might serve on a municipal or regional basis. The City of Helsinki has achieved significant savings in the use of natural resources and in costs by developing its surplus soil intermediate storage and processing network and the recovery of surplus soil.

Responsibility: **Ministry of the Environment,** municipalities

Timetable: 2018–

4.3 Developing the MATTI soil condition database for greater functionality and better support in planning and decision-making

Data on soil contamination and waste material recovery sites should be available more easily and in a more user-driven manner. The data in the MATTI database should be reliable, comprehensive and up to date to allow their utilisation in decision-making. Access to the database should, where possible, be made more open once the site data have been updated and the reliability of the data has been ensured.

Responsibility: **Ministry of the Environment**; Finnish Environment Institute SYKE; ELY Centres; municipalities

Timetable: 2017–

4.4 Creating instruments for risk management in respect of contaminated land areas that save natural resources and promote the use of methods that support the circular economy

The rehabilitation of contaminated soil is based on excavation at more than 90% of rehabilitation sites even though at many sites, sustainable rehabilitation procedures such as in-situ technologies for the treatment of soil and ground water could also be used. The treatment of excavated contaminated soil has largely been based on recovery or landfilling. The final disposal of soil in landfills will decrease as landfilling decreases, and the aim in fact is to prevent the generation of soil waste and to increase the treatment and use of recyclable soil waste. A variety of instruments will be required to advance this aim.

Responsibility: **Ministry of the Environment**, ELY Centres, Finnish Environment Institute SYKE

Timetable: 2017–

Suggestions for other actors

4.5 Preparing a set of guidelines for designers and developers on the sustainable use of waste materials in earth construction

In order to promote the use of waste materials in earth construction, property owners, land use planners and developers must have access to the expertise necessary for the safe and appropriate use of such materials. More information is required on effective recovery means and recovery sites as well as on environmental impacts. In addition, models and tools should be developed to identify recovery options of overall economic benefit for various kinds of waste materials.

Responsibility: **Building Information Group, INFRA – Infra Contractors Association in Finland**

Target 5: Achieving greater accuracy and correctness in statistics on construction and demolition waste

Measures

5.1 Attending to the need for data and statistics compilation on construction and demolition waste in the context of developing the waste information system

See measure 1.1. Data transfer interfaces between the demolition waste notification, shipping documents and the new information system will be taken into account in the creation of the new information system.

Responsibility: **Ministry of the Environment, Ministry of Finance,** Statistics Finland, Finnish Environment Institute SYKE

Timetable: 2018-

5.2 Developing an information service for monitoring and anticipating material cycles in the built environment

The precise volume of material present in the built environment is unknown. In the interests of improving material recycling, the total volumes and geographic location of both materials in use and materials to be recycled should be managed. An information system plan which touches on measures 1.1 and 5.1 will be prepared.

Responsibility: **Ministry of the Environment,** The Finnish Innovation Fund Sitra

Timetable: 2018–

Biodegradable waste

Target 6: Halving food waste by 2030

Measures:

6.1 Drafting a roadmap for reducing food waste in Finland

Food waste of approximately 400–500 million kg is generated each year in Finland. This represents 15% of all edible food. The Sustainable Development Goal in the UN Agenda 2030 and the target in the Commission's communication on the circular economy is to halve food waste by 2030. The national roadmap will outline the tools to achieve this target as well as the control indicators and control system to monitor food waste. Finland will make an active contribution to the development of food waste determination and calculation methods.

Responsibility: **Ministry of Agriculture and Forestry,** Ministry of the Environment, Ministry of Economic Affairs and Employment

Timetable: 2018–

6.2 Introducing a voluntary material efficiency commitment in the food sector to promote food waste reduction

See 1.2.

Responsibility: **Ministry of Agriculture and Forestry, Ministry of the Environment, Ministry of Economic Affairs and Employment,** Finnish Grocery Trade Association PTY, Finnish Food and Drink Industries' Federation ETL**,** Motiva Oy

Timetable: 2017–

6.3 Channelling funding related to the food system to research and experimentation to reduce food waste and to promote the sustainability of the food system, and investing in advisory services and communications

Finland has a large number of actors which provide information about matters relating to the environmental impacts of food, as well as actors which generate research data or develop new practices and tools for more sustainable production and consumption of food. The significance of reducing food waste needs to be underscored in advisory services and communications. Advisory services on sustainable smart choices and reducing food waste also need to be coordinated on a national scale.

Responsibility: **Ministry of Agriculture and Forestry, Ministry of the Environment**, Ministry of Economic Affairs and Employment, The Finnish Innovation Fund Sitra, Natural Resources Institute Finland LUKE

Timetable: 2020-

6.4 Reinforcing food waste awareness in basic education and HORECA (food service industry) education, and maintaining food education at day care centres

The inclusion of food waste awareness in the basic education curriculum and in vocational HORECA education will be ensured. Reducing food waste and its relevance to the environment as well as its financial aspects could be taught in home economics classes. The earlier children and young people are provided with skills and knowledge, the better they can adjust their personal consumption habits.

Responsibility: **Ministry of Education and Culture,** Finnish National Agency for Education, municipalities

Timetable: 2018-

Suggestions for other actors

6.5 Implementing composition studies on the mixed waste from stores, food service providers and restaurants, and studying the share of food waste in the context of these studies

Responsibility: **Actors in the retail and HORECA sectors**, **waste management enterprises,** Natural Resources Institute Finland LUKE

6.6 Expanding the 'leftover lunch' practice throughout the country

The Finnish Innovation Fund Sitra's Resource Wisdom project in Jyväskylä involved selling the leftover food from schools' lunch counters to third parties at cost. The 'leftover lunch' experiment gained national awareness and the practice was adopted in fifteen other cities as well. Dissemination of the practice will be continued.

Responsibility: **Municipalities, The Finnish Innovation Fund Sitra**

6.7 Supermarkets and the hospitality sector will adopt the Nordic Swan Ecolabel or another certified ecolabel or environmental management system

The criteria of the Nordic Swan Ecolabel or the EU Ecolabel will steer supermarkets and the hospitality sector towards action consistent with the circular economy. The aim is actively to reduce waste volumes and to cut down on the amount of unsorted waste destined for incineration. Supermarkets will moreover be required to measure their food loss.

Responsibility: **Finnish Commerce Federation, Finnish Hospitality Association MaRa,** Nordic Swan Ecolabel

Target 7: Recycling 60% of the biowaste included in all municipal waste generated

Measures

7.1 Laying down provisions in the Waste Decree on separate collection obligation limits for biowaste

Provisions will be laid down in the Waste Decree on the framework conditions for collecting biowaste separately from residential properties as well as restaurants, food service providers and other units which generate high volumes of biowaste, taking into account factors including geography and the location of habitation and services. Measure 10.1 addresses other separate collection obligations for municipal waste.

Responsibility: **Ministry of the Environment**

Timetable: 2018–

7.2 Developing a national method for estimating the volume of biowaste and garden waste that is composted at properties and assessing the status quo

An updating estimate of the volume of home composting is required for the preparation of waste statistics. A single common method would help estimate the volume of composting at properties throughout the country and its effectiveness with greater accuracy and reliability.

Responsibility: **Ministry of the Environment, Finnish Solid Waste Association (the current KIVO Finland), municipalities, Statistics Finland, Finnish Environment Institute SYKE**

Timetable: 2017–

7.3 Organising a national biowaste campaign

Amendment of the Waste Decree will necessitate also a broad-based change in practices. The Waste Act imposes on certain entities an obligation to provide advice, and the Ministries intend to bring the parties responsible together to organise a national biowaste campaign as well as other biowaste sorting advice provision in support of the enforcement of the Decree. Enterprises in the food industry could at the same time be encouraged to incorporate the sorting of biowaste into the Society's Commitments to Sustainable Development that they have given.

Responsibility: Ministry of the Environment, Ministry of Agriculture and Forestry, Prime Minister's Office, Finnish Environmental Industries YTP, KIVO Finland, municipalities, waste businesses

Timetable: 2018–

The target is also advanced by measures 10.1 and 10.5

Influencing EU policies

7.4. Developing legislation to allow the recovery of foodstuffs that are unfit for human consumption but pose no threat to the health of humans and animals for use as e.g. animal feed or its raw material

Responsibility: **Ministry of Agriculture and Forestry,** Finnish Food Safety Authority Evira

Timetable: 2018–

Suggestions for other actors

7.5 Supermarkets, institutional kitchens and restaurants engage in ongoing development of their biowaste sorting and ensure the sorting expertise of their personnel

See municipal waste measure 10.6

Responsibility: **organisations representing commerce and the restaurant sector, supermarkets, institutional kitchens, restaurants**

7.6 Further intensifying the provision of advisory services in biowaste sorting to residents and developing the biowaste collection systems

See municipal waste measure 10.7

Responsibility: **Municipalities and municipal waste management companies**

Target 8: Increasing the use of fertiliser products made from recycled raw materials to replace fertilisers made from virgin raw materials

Measures

8.1 Increasing research funding for recycled fertiliser products and the reclamation of nutrients from waste

Research funding will be allocated to topics such as improving the quality of recycled fertiliser products, risk identification and assessment, and harmful substance removal. Further study is required especially on the reclamation of phosphorus and nitrogen, as well as the production and use of biochar and the potential environmental benefits and drawbacks of these.

Responsibility: **Ministry of Agriculture and Forestry, Ministry of the Environment**, Finnish Food Safety Authority Evira, Business Finland

Timetable: 2018–

8.2 Developing and introducing instruments in agriculture to encourage the use of recycled nutrients for field crops

The research findings will be applied in the planning of subsidies and other instruments such that the instruments encourage the use of good-quality recycled fertilisers as appropriate, taking into account soil conditions and plant needs.

Responsibility: **Ministry of Agriculture and Forestry,** Natural Resources Institute Finland LUKE, Central Union of Agricultural Producers and Forest Owners MTK

Timetable: 2018-

Suggestions for other actors

8.3 Developing a voluntary quality system for recycled fertiliser products in order to boost demand

Responsibility: **Finnish association for biological waste treatment, Finnish Biogas Association, Finnish Water Utilities Association FIWA, and enterprises in the sector**

8.4 Creating tailored nutrient provision and recovery models

The recovery potential of by-products used as fertiliser product/fertiliser products will be elaborated, taking into account the nutrient needs of plants, the usefulness of nutrients in the fertiliser product, and the existing nutrients in the soil and field productivity.

Responsibility: **fertiliser product manufacturers, advisory service providers, consultants, farmers, Natural Resources Institute Finland LUKE**

8.5 Incorporating recycling targets in the landscaping procurement principles of municipalities and other public procurement entities and drafting procurement guidelines

Many recycled fertilisers can be used in landscaping and it would be important for municipalities and other public procurement entities, when putting contracts out to tender, to better take into account the use of sustainable recycled fertiliser products. See measure 1.5.

Responsibility: **Municipalities and other public procurement entities,** Centre of Excellence for sustainable and innovative public procurement, Finnish association for biological waste treatment, Finnish Association of Landscape Industries

Municipal waste

Target 9: Slowing down the growth of the volume of municipal waste relative to GDP and achieving relative decoupling

Measures

9.1 Studying and introducing economic instruments to step up the prolongation of product lifespans

In the circular economy roadmap for Finland, tax instruments and a shift in taxation focus has been raised as a policy measure to promote the circular economy. To date, Finland has applied fairly few economic instruments to stimulate the circular economy, and there are no economic instruments in use which concern repair activities or the prolongation of product lifespans otherwise. Various kinds of economic instruments should be studied to reduce the amount of waste and to boost repair and maintenance services. Economic instruments could also accelerate e.g. services in support of product-sharing.

Responsibility: **Ministry of Finance**, Ministry of the Environment

Timetable: 2020–

9.2 Studying the potential for advancing the sharing economy and removing its barriers, and supporting sharing economy experiments

Resource use becomes more efficient when goods are shared or rented. Despite our small market, Finland has the potential for developing new digital solutions to advance the sharing economy. However, advancement of the sharing and renting economy requires the development of ground rules and tax practices.

Responsibility: **Ministry of Economic Affairs and Employment, Ministry of Finance,**

Timetable: 2018–

Influencing EU policies

9.3 Preparing Finland's positions on promoting recyclability, reparability and resource efficiency in the EU's legislative and enforcement activities

The EU has initiated standardisation with the aim of developing horizontal standards for adding material efficiency requirements to the ecodesign regulations. Finland needs to prepare an influencing strategy on promoting recyclability, reparability and resource efficiency in the ecodesign regulations.

Responsibility: **Ministry of Economic Affairs and Employment, Ministry of the Environment,** Finnish Environment Institute SYKE, Nordic Swan Ecolabel, Energy Authority

Timetable: 2018–

Suggestions for other actors

9.4. Preparing a report on the barriers to and potential for packaging re-use and a proposal for measures to boost re-use among key packaging categories

Responsibility: **Producer organisations, Rinki Oy, Finnish Packaging Association**

9.5. Developing sharing models suited for various kinds of actor networks, corporations and public entities, possibly also commercial applications and service concepts

Responsibility: **Enterprises, associations, municipalities**

Target 10: Recycling 55% of municipal waste

Measures

10.1 Laying down provisions in the Waste Decree concerning separate collection obligation limits for municipal waste specified by type of waste

The Waste Decree will lay down the framework conditions for the organisation of separate waste collection for which the municipality and the holder of the waste is responsible, taking into account factors including geography and the location of habitation and services. Separate collection obligation limits should be provided for in respect of the following waste: paper, board, glass, metal and plastics. The potential for separate collection should also be examined in respect of textiles, as proposed in the new draft Waste Framework Directive. Concerning biowaste, see measure 7.1.

Responsibility: **Ministry of the Environment**

Timetable: 2018–

10.2 Determining the effect of waste management cost visibility on waste volumes and recycling rates by means of experimentation

Making the costs of waste management visible to consumers at the level of individual home and the possibility for consumer to have a direct impact on their waste management fees may raise the recycling rate. Two experiments relating to this are currently underway with partial funding from the Ministry of the Environment and their results will become available after 2018. Measures will be introduced on the basis of the results.

Responsibility: **Ministry of the Environment,** KIVO Finland, municipal waste utilities

Timetable: 2017–

10.3 Studying the effects of waste incineration tax and expanded emissions trading (to waste incineration) on the achievement of climate goals and waste recycling targets

The study will examine the effects of waste incineration taxation, when this concerns exports, co-incineration and waste incineration alike, or expanding emissions trading to cover waste incineration on the achievement of climate goals and waste recycling targets.

Responsibility: **Ministry of the Environment, Ministry of Finance, Ministry of Economic Affairs and Employment**

Timetable: 2017–

10.4 Determining the legislative procedure for prohibiting the energy recovery of materials separately collected for recycling

Separately collected recyclable waste is diverted to incineration from e.g. energy waste collection[2]. The volume of such waste varies from year to year and energy recovery partly has to do with changes in the material that make it non-recyclable (damp, dirt, etc.). A ban on the incineration of separately collected material has been proposed in the context of the reform of the Directives in the waste sector.

Responsibility: **Ministry of the Environment**

Timetable: 2018–

2 Policy instruments for increasing waste recycling, 22 November 2016. Report [in Finnish only]. Prime Minister's Office. Publications of the Government's analysis, assessment and research activities 53/2016. 56 pages. ISSN Web: 2342-6799. ISBN Web: 978-952-287-311-8

10.5 Studying the setting of regional targets to increase recycling

The potential for setting different targets for different regions will be studied in order to cater for regional differences in achieving the recycling target and responsible parties for the regional targets will be assigned. Regional targets should be such that regional data is available and clear responsible parties for the target can be assigned. One such target could be e.g. reducing the amount of mixed and energy waste.

Responsibility: **Ministry of the Environment,** ELY Centres

Timetable: 2018–

10.6 Encouraging and enhancing cooperation among the various actors to increase recycling

A working group will be appointed and tasked with innovating concrete practices to improve the recycling of municipal waste and reinforcing cooperation among actors.

Responsibility: **Ministry of the Environment,** producer organisations, Finnish Environmental Industries YTP, KIVO Finland

Suggestions for other actors

10.7 Organising national recycling campaigns

At the same time as the separate collection obligations specified by type of waste mentioned in measure 10.1 take effect, national campaigns will be organised for key target groups.

Responsibility: **KIVO Finland, Finnish Environmental Industries YTP, municipal waste utilities, waste management enterprises, producer organisations, Ministry of the Environment**

10.8 Introducing stricter separate collection obligations in the municipal waste management regulations for recyclable waste (including packaging collected at properties)

At the same time as the separate collection obligations specified by type of waste mentioned in measure 10.1 take effect, municipal waste management regulations must be updated to correspond to the new obligations and to cater for regional differences.

Responsibility: **municipalities**

10.9 Conducting experiments in the development of new services to promote re-use and recycling

Recycling could be increased by developing services to lease and maintain property-specific composting machines, for example in areas where the majority of the housing stock consists of single-family homes.

Responsibility: **Third-sector actors, municipal waste utilities, households, waste management enterprises**

Target 11: Increasing the recycling of packaging waste

The aim is to reach at least the recycling targets under the Packaging Directive.

Measures

11.1 Evaluating the effectiveness of the packaging producer responsibility system from the perspective of service level, cost-efficiency and environmental impacts as well as the waste volume diverted to recycling

An undertaking to study the implementation of the packaging producer responsibility system was given in the context of the issue of the Packaging Decree. The packaging producer responsibility system changed at the start of 2016 and little data on its functioning are available to date. The recycling requirements will be specified in accordance with the findings of the study.

Responsibility: **Ministry of the Environment, Pirkanmaa ELY Centre,** producer organisations of packaging sector, Rinki Oy

Timetable: 2017–2020

Suggestions for other actors

11.2 Increasing the provision of advice and information to promote the recycling of packaging and encouraging sorting especially in respect of plastic packaging

Producer organisations have been made subject to a broad obligation to provide advice on the recycling of packaging. In order to increase recycling from its current level, the provision of advice should be stepped up and its monitoring should be increased. In respect of plastic packaging in particular, there is an obvious need for advice on sorting, as most locations are new to plastics collection and there is much untapped recycling potential in plastic packaging.

Responsibility: **Producer organisations of packaging sector, Rinki Oy,** Pirkanmaa ELY Centre

11.3 Launching research and development projects to innovate the recycling of wood and plastic packaging waste

New high-quality ways of recycling wood and plastic packaging as well as forms of cooperation between producer organisations and recyclers will be developed.

Responsibility: **Producer organisations,** Rinki Oy, industry, universities, research institutes, Business Finland

Electrical and electronic equipment (EEE) and waste electrical and electronic equipment (WEEE)

Target 12: Prolonging the lifespans of EEE and increasing their utilisation rate

Measures

12.1 Directing research and experimentation funding to prolonging the lifespan of EEE and enabling its re-use

The primacy of re-use over recycling shall be given greater consideration in investments. With most EEE manufactured abroad, experimentation in Finland is mainly possible at the end of the product lifecycle. The results of the experiments will be utilised in EU participation to prolong the lifespan of EEE.

Responsibility: **Ministry of Economic Affairs and Employment, Business Finland,** Ministry of the Environment, The Finnish Innovation Fund Sitra

Timetable: 2017–

12.2 Studying equipment-sharing potential and the potential for higher utilisation rates

The study will also look into the promotion of leasing, lending and renting, as well as the specific potential for municipal lending.

Responsibility: **Government Administration Department, Ministry of Economic Affairs and Employment,** Ministry of the Environment, municipalities, counties

Timetable: 2020–

Influencing EU policies

12.3 Developing re-use statistics and monitoring

Targets and common statistical methods for re-use should be prepared at the EU level.

Responsibility: **Ministry of the Environment**

Timetable: 2017–

Suggestions for other actors

12.4 Strengthening the re-use expertise of actors within the producer responsibility system

Re-use expertise refers to the identification, repair and preparation for re-use of re-usable products and the sale of used products. Producer organisations could develop re-use approaches and form a regionally comprehensive network of re-use service providers.

Responsibility: **WEEE producer organisations,** partners, Pirkanmaa ELY Centre

12.5 Increasing the provision of consumer information on EEE lifespans, repair potential and warranty periods

The provision of information on steps to prolong EEE lifespans could be increased. Another possibility would be to organise an 'EEE repair day' along the lines of Restaurant Day (when anyone can set up a pop-up restaurant for one day). Authorised service providers and legal WEEE take-back points would be integrally involved in organising such an event.

Responsibility: **Producer organisations, actors in the sector of re-use, authorised service providers**

Target 13: Reducing the share of WEEE in mixed waste and boosting its recycling

Measures

13.1 Intensifying supervision and enforcement of distributors' and producer organisations' obligation to provide information

Producer organisations and distributors are subject to an obligation to provide information on WEEE take-back points, yet to date very few residents are aware of the obligation of distributors to accept WEEE. Distributors and producer organisations should communicate their WEEE acceptance effectively and the supervisory authority should pay particular attention to compliance with the information provision obligation.

Responsibility: **Pirkanmaa ELY Centre,** producer organisations, distributors

Timetable: 2018–

Suggestions for other actors

13.2 Increasing information provision and encouraging e.g. the use of a common logo at WEEE take-back points

The information provision seeks to increase awareness of take-back points among consumers and enterprises and also to prevent grey-economy WEEE operations by having an increasing share of WEEE being returned through official channels.

Responsibility: **Producer organisations, distributors**

Target 14: Reclaiming and recycling critical raw materials and valuable materials in WEEE more effectively

Measures

14.1 Increasing research and experimentation funding to the reclamation of critical raw materials and valuable materials and to assessment of their potential

Recycling processes are mainly able to reclaim substances present in large quantities. Substances present at low levels are often lost in the processes even when these might be valuable and classified as critical.

Responsibility: **Ministry of Economic Affairs and Employment, Business Finland,** The Finnish Innovation Fund Sitra

Timetable: 2018–

Influencing EU policies

14.2 Linking recycling targets not only to quantities but also or instead to value, rarity, harmfulness or a combination of these

In order for this target to be achieved, WEEE treatment technology needs to be developed. It may also be necessary to impose on product manufacturers an obligation to provide information on the substances contained in their EEE.

Responsibility: **Ministry of the Environment**

Timetable: long-term objective

Target 15: Removing harmful substances in WEEE from circulation

Measures

15.1 Increasing research and experimentation funding to the removal of harmful substances from circulation

Information on the most problematic points/streams is needed in order for harmful substances to be separated before the material is recycled. Persistent organic pollutants (POP) present a particular problem in EEE.

Responsibility: **Ministry of Economic Affairs and Employment, Business Finland,** The Finnish Innovation Fund Sitra

Timetable: 2018–

15.2 Intensifying supervision

The supervision of compliance with EEE producer responsibility legislation and conformity requirements will be intensified in respect of EEE imported to Finland through distance selling. Pirkanmaa ELY Centre would be responsible for the former and the Finnish Safety and Chemicals Agency Tukes for the latter. The ELY centres will also intensify their supervision of compliance with the provisions on the handling of EEE. More guidance and advice on the obligations and interfaces of waste, chemicals and product legislation will be provided.

Responsibility: **Pirkanmaa ELY Centre, ELY centres, Finnish Safety and Chemicals Agency Tukes**, Ministry of Economic Affairs and Employment, Ministry of the Environment

Timetable: 2018–

15.3 Increasing the use of ecolabelled products in public administration

Increasing the use of ecolabelled EEE can reduce the use of harmful chemicals even before any waste is generated. See measure 1.6.

Responsibility: **Prime Minister's Office, Ministry of Economic Affairs and Employment, Ministry of the Environment,** Nordic Swan Ecolabel

Timetable: 2018–

Influencing EU policies

15.4 Developing an EU-wide electronic product material content database in respect of harmful substances, critical materials and precious metals in particular

The material content database would provide recyclers with indications as to the materials that might be present in EEE, although a problem does arise from the manufacture of products outside the EU. Product content information might also be made portable by means of e.g. QR/RFID codes.

Responsibility: **Ministry of Economic Affairs and Employment, Ministry of the Environment**

Timetable: long-term objective

Target 16: Intensifying the supervision of the exports of used EEE and WEEE

Measures

16.1 Securing adequate resources for Customs and the Police to intensify the supervision of exports of used EEE

The continued availability of resources for supervision to prevent the illegal export of waste must be secured when implementing cost-cutting measures. Resources must be available for both supervision and the provision of information on export requirements.

Responsibility: **Ministry of the Interior, Ministry of Finance,** Customs, Police

Timetable: 2017–

16.2 Adding to the Waste Act and the Decree on Service Charges on criteria for charges provisions to allow Finnish Environment Institute SYKE to charge to exporters an inspection fee to cover the costs of the practical arrangements of goods inspection

An amendment of the Waste Act to allow such a charge to be made has already been circulated for consultation. The Decree on Service Charges must safeguard the adequacy of the inspection fee.

Responsibility: **Ministry of the Environment**

Timetable: 2017-

16.3 Implementing the guidelines and measures for inspections of WEEE laid down in the international waste shipment inspection plan for 2017–2019 of the Finnish Environment Institute SYKE

Illegal exports of waste can be effectively prevented and controlled when these target the point of generation or departure of the possible waste export. Active information provision on the export requirements will effectively prevent illegal exports of waste. The inspection plan of the Finnish Environment Institute SYKE provides guidelines for inspecting WEEE. The guidelines in the inspection plan shall be observed in connection with periodic inspections of facilities, for example.

Responsibility: **Finnish Environment Institute SYKE, ELY centres,** municipalities, Customs, Police, producer organisations

Timetable: 2018–

5. Waste Plan preparation process and impacts

5.1 Preparation and participation

From Recycling to a Circular Economy – National Waste Plan to 2023 was prepared in broad cooperation with experts on waste issues and various stakeholders. The Strategic Cooperation Group for the Waste Sector appointed by the Ministry of the Environment and consisting of representatives of the key stakeholders in the waste sector (Figure 2) acted as the steering group for the preparation of the Waste Plan. The steering group convened for 16 meetings during the preparation of the Waste Plan.

Figure 2. The waste sector in Finland and its stakeholders were broadly represented on the Waste Plan steering group. The composition of the steering group is presented in greater detail in the background report to the Waste Plan[3].

Steering Group

MINISTRIES

- Ministry of Agriculture and Forestry
- Ministry of Economic Affairs and Employment
- Ministry of Social Affairs and Health
- Ministry of the Environment

GOVERNMENT AND RESEARCH

- Finnish Environment Institute SYKE
- Pirkanmaa ELY Centre (producer responsibility authority)
- North Ostrobothnia ELY Centre (representing ELY centres)
- Aalto University
- Finnish Food Safety Authority Evira
- Finnish Competition and Consumer Authority
- Business Finland
- VTT Technical Research Centre of Finland Ltd

NON-GOVERNMENTAL

- Confederation of Finnish Industries EK
- Waste Management Association JHY
- Finnish Solid Waste Association (the current KIVO Finland)
- Union of Agricultural Producers and Forest Owners MTK
- The Finnish Innovation Fund Sitra
- Finnish Commerce Federation
- Finnish Real Estate Federation
- Association of Finnish Local and Regional Authorities
- Finnish Packaging Association
- Finnish Association for Nature Conservation FANC
- Finnish Environmental Industries YTP
- Confederation of Finnish Construction Industries RT (INFRA)

Working group
Ministry of the Environment, Finnish Environment Institute SYKE, ELY centres

3 Laaksonen J., Pietarinen A., Salmenperä H. 2017. The National Waste Plan to 2023; Background report. The Finnish Environment 3/2017. Helsinki. ISBN: 978-952-11-4734-0. Available at [in Finnish only]: http://urn.fi/URN:ISBN:978-952-11-4734-0

5.1.1. Determination of target state and selection of key areas

Target state determination and selection of key areas were started in spring 2015 in a workshop for waste sector experts from the Ministry of the Environment and Finnish Environment Institute SYKE. A separate workshop was held for the steering group, who also addressed the target state and key area selection at several of their meetings.

The most important selection criteria for the key areas were:

1. Construction and demolition waste
- the second largest type of waste in Finland in terms of quantity
- the Waste Framework Directive imposes targets on this type of waste and the targets are yet to be achieved
2. Biodegradable waste
- contributes a considerable portion of the greenhouse gas emissions of waste management
- high recycling potential and vital to the recycling of nutrients
- raising the recycling rate of biowaste also raises the recycling rate of municipal waste
3. Municipal waste
- achieving the recycling target under the Waste Framework Directive presents a challenge
- the recycling targets are likely to be raised even higher in the waste Directive amendments currently under consideration
4. Waste electrical and electronic equipment
- contains both critical and valuable raw materials that should be recycled to a greater extent
- contains also substances that should be removed from circulation (e.g. POP substances)
- illegal transboundary shipments occur despite supervision

5.1.2. Determination of targets and measures

Several workshops were held for the purpose of determining the targets and measures. An expert workshop for each key area was held in autumn 2015. The draft targets produced in the workshops were circulated for comments in autumn 2015 and also posted on the government's open discussion forum otakantaa.fi.

Three regional events were held in early spring 2016. Local waste management and recycling actors as well as administration were invited to attend these events, which took place in Tampere, Kuopio and Oulu. Information on the events was also made available online and they were open to the public.

The targets and measures re-worked on the basis of the regional events were considered in an expert workshop where experts from the Ministry of the Environment and the Finnish Environment Institute SYKE assessed the impacts and feasibility of the measures as formulated. Aalto University's Design for Government course contributed to the brainstorming of ideas for WEEE measures. The course included also a stakeholder meeting with actors in the sector. The preparation of the Waste Plan furthermore entailed numerous other meetings with experts as well as consultation in various sectors.

In between workshops, the draft plans and the background report were circulated for comments to the Strategic Cooperation Group for the Waste Sector and other cooperation organisations in the sector.

5.1.3. Waste Plan impact assessment

The environmental and economic impacts of the National Waste Plan as well as its other impacts on society were assessed already at the preparation phase. The basis for assessment was a general assessment obligation instead of the environmental impact assessment under the Act on the Assessment of the Impacts of the Authorities' Plans, Programmes and Policies on the Environment. The assessment was mainstreamed into the entire preparation process and the phases at which decisions on target and measure selection were made. The Waste Plan preparation process was interactive and it was carried out in accordance with the principles under the aforementioned Assessment Act.

The assessed impacts are conditional on extensive realisation of the measures in the plan. The impacts of the measures and the related requirements and uncertainties are examined in greater detail in a separate assessment report (http://www.ym.fi/en-US/The_environment/Waste/The_National_Waste_Plan).

5.1.4. Consultation period and comments received

The draft Waste Plan was presented at a public event held on 30 May 2017. The event was streamed live online and also recorded for the website. The plan was then circulated for consultation and posted on the lausuntopalvelu.fi service (consultation period 13 June – 20 August). A total of 87 comments were received, just under 300 pages in all. For the most part, the draft plan and its targets and measures were favourably received. Several requests for specification of individual targets and measures were submitted, as were some negative comments. The providers of comments also reported their own measures to advance the targets. The feedback has been taken into account whenever possible.

5.2 Key impacts of the Waste Plan

The central impacts of the National Waste Plan have to do with increased sustainable and safe use of resources and the advancement of environmental protection. Material cycles will grow stronger and cleaner once the plan is implemented. Implementation of the plan will have a positive effect on the development of waste volumes and the level of recycling through the introduction of new procedures and technologies. The plan will take waste recycling to a whole new level with its reinforcement of the recycled raw materials market.

The measures in the Waste Plan will heighten research and experimentation relating to the circular economy. Investment in and focus on the provision of training and information to enterprises, government and the public, along with new approaches and forms of cooperation between enterprises and the public sector will serve to augment understanding of the circular economy and waste as well as environmental awareness and expertise.

For the most part, the impacts of the Waste Plan on the economy will be favourable through e.g. new business relating to recycling, a rise in the rate of employment, and investment in facilities. However, achieving the recycling targets, for example, also calls for significant financial investment, which may result in an increase in the costs of waste management. In the management of municipal waste, the environmental and cost impacts of increased recycling indeed need to be studied in order to determine the best possible direction overall. Realisation of the plan will also create conditions and opportunities for introducing new circular economy approaches and economically viable business concepts.

The central impacts of the National Waste Plan by key area are:

General measures towards achieving the target state

- Material efficiency will rise in the public and private sectors by means of voluntary agreements and audits, permit procedures and public procurement.
- The increased provision of training and advice will enhance an understanding of approaches to advance the circular economy.

Construction and demolition waste

- Intensified re-use and recycling of construction products and components will save virgin natural resources.
- The new practices proposed for public and private actors and a higher level of knowledge and skills will promote safe material cycles and reinforce the recycled raw materials market.

Biodegradable waste

- Measures to reduce food waste and food loss targeted at different points and actors in the food chain will reduce the consumption of natural resources and energy, and thus effectively mitigate climate change.
- More effective and safer recycling of biodegradable waste and the nutrients in it will reduce the need for mineral fertilisers in agriculture, as well as the need for virgin phosphorus, which is considered a critical raw material.

Municipal waste

- The 'product as a service' business model replacing outright purchases, a wider adoption of sharing economy approaches and more efficient re-use will reduce the need to manufacture new products and the use of virgin natural resources.
- The measures will enable the creation of new circular economy business concepts. Increased waste recycling will strengthen employment and business in the recycling sector. A rise in recycling may raise waste management costs.

Waste electrical and electronic equipment

- As consumers adopt new approaches, the higher equipment utilisation rate and its longer lifespan will control the volume of WEEE generated.
- New research data, consumer choices and intensified recycling will remove harmful substances from recycled waste streams and improve the quality of material cycles.
- Intensified supervision of exports of WEEE will promote environmental and health protection on a global scale. Measures to combat the grey economy will strengthen public finances.

In addition, the National Waste Plan serves to support and advance many other national and international policies and targets in a wide range of administrative branches, the key among these being the EU circular economy policy, the sustainable consumption and production programme, the bioeconomy strategy, the natural resources strategy, the programme to promote material efficiency in construction, the national material efficiency programme, and the energy and climate strategy.

6. Monitoring

The Waste Framework Directive requires the implementation and effectiveness of the National Waste Plan and the programme to reduce the quantity and harmfulness of waste to be evaluated at least every sixth year and when necessary, a revised plan to be prepared for adoption by the Government.

The implementation of the Waste Plan will be monitored with both quantitative and qualitative indicators. The quantitative indicators to monitor the Waste Plan and the programme to reduce the quantity and harmfulness of waste have been selected for their clarity and simplicity, also in terms of data availability. Monitoring measures were designed in the context of measure formulation.

The Finnish Environment Institute SYKE will compile the indicators on an annual basis. The choice of indicators relies as much as possible on data that is collected and monitored on the basis of existing legislation in order to ensure also the future availability of monitoring data. Key data sources include the waste statistics of Statistics Finland and producer responsibility statistics. Certain key indicators used to monitor the previous Waste Plan are also monitored where these are applicable and provide useful data. These indicators describe overall development in waste management. The indicators are reported annually on the website of the National Waste Plan.

The monitoring of the realisation of the measures complements the monitoring of the indicators. Responsibility for monitoring the realisation of the measures rests with the Ministry of the Environment, which in this context will also examine the development of the indicators for waste volume reduction and the food waste and food loss indicator in particular. The mixed waste composition studies prepared by municipal waste management companies and the waste management companies' data on the accumulation of recyclables collected separately from households will also be examined as part of the monitoring process.

Progress on the measures will be assessed at the midpoint of the Waste Plan period in 2020 and in 2023. The measures yet to be launched will be pulled together in the interim assessment in 2020.

It was observed in the term of the previous Waste Plan that the indicators used did not lend themselves particularly well to describing the impacts of the measures. The measures put in place lacked sufficient strength to make changes in the development of material cycles in the national economy, for example. The reduction in the volume of waste will consequently be monitored not only by certain numerical indicators but also with a range of qualitative indicators. In addition, the monitoring report will examine the progress made with indicators for waste generation prevention and material efficiency at the national and EU levels.

Efforts to enhance the compilation of statistics on construction and demolition waste in building construction in particular have been underway for some time now. The waste statistics for the construction sector have been compiled from the data of professional and institution waste processors in the VAHTI information system (the current YLVA environmental permit and control data system). The Waste Plan proposes the creation of a new waste information system for reasons including improvements in the traceability of waste.

6.1 Indicators

Overall development in waste management, such as the development in waste volume and recycling, will be monitored with the following indicators.

Table 2. Overall development in waste management

Indicator		Data source
Total waste volume by sector	tonnes / year	Statistics Finland: Waste statistics
Waste treatment volumes	tonnes / year	Statistics Finland: Waste statistics
Volume of hazardous waste by sector	tonnes / year	Statistics Finland: Waste statistics
Hazardous waste treatment volumes	tonnes / year	Statistics Finland: Waste statistics
Packaging waste recycling rates by fraction (glass, plastics, paper/cardboard/board, metal, wood)	% / year	Producer responsibility authority (Pirkanmaa ELY centre): Packaging waste statistics
Waste volumes permitted, exported and imported in accordance with the Waste Shipments Regulation by type of waste	tonnes / year	Finnish Environment Institute SYKE
Prices of waste collection from small properties	year 2015 index=100	Statistics Finland: Consumer price index
Environmental goods and services added value in the waste management and recycling sector	euro / year	Statistics Finland: Environmental goods and services sector statistics
Environmental goods and services employment in the waste management and recycling sector	person-years	Statistics Finland: Environmental goods and services sector statistics

Targets in the key areas will be monitored with the following indicators:

Table 3. Monitoring and indicators for targets in the key areas

Indicator		Data source
Municipal waste		
Volume of municipal waste generated	tonnes / year	Statistics Finland: Waste statistics
Volume of municipal waste/resident	kg / year	Statistics Finland: Waste statistics and population statistics
Municipal waste volume development relative to GDP development		Statistics Finland: Waste statistics and Annual national accounts
Shares of municipal waste treatment	%	Statistics Finland: Waste statistics
Construction and demolition waste		
Total volume of construction and demolition waste generated	tonnes / year	Statistics Finland: Waste statistics
Number of notifications under the Decree on the recovery of certain waste in earth construction and the volume of waste recovered accordingly	number / year tonnes / year	MATTI soil condition information system, YLVA environmental permit and control data system
WEEE		
EEE re-use volume	tonnes / year	Producer responsibility authority (Pirkanmaa ELY Centre): WEEE producer responsibility statistics
Volume of recovered WEEE	tonnes / year	Producer responsibility authority (Pirkanmaa ELY Centre): WEEE producer responsibility statistics
Biodegradable waste		
Volume of biodegradable municipal waste	tonnes / year	Statistics Finland: Waste statistics, calculation Finnish Environment Institute SYKE
Volume of composted biodegradable waste	tonnes / year	YLVA environmental permit and control data system
Volume of decomposed biodegradable waste	tonnes / year	YLVA environmental permit and control data system
Number of biogas facilities	number	University of Eastern Finland: Biogas facility register, and YLVA environmental permit and control data system

Legislation

Waste Act 646/2011

Waste Decree 179/2012

Government Decree on the recovery of certain waste in earth construction 843/2017

Government Decree on waste incineration 151/2013

Government Decree on landfills 331/2013

Government Decree on waste of electric and electronical equipment 519/2014

Government Decree on packaging and packaging waste 518/2014

Government Decree on the return system for beverage containers 526/2013

Regulation (EC) N:o 98/2008 of the European Parliament and of the Council on waste (Waste Framework Directive)

Regulation (EC) N:o 1013/2006 of the European Parliament and of the Council on shipments of waste

Act on the Assessment of the Impacts of the Authorities' Plans, Programmes and Policies on the Environment (200/2015)

Glossary

Municipal waste means waste generated in permanent dwellings, holiday homes, residential homes and other forms of dwelling, including sludge in cess pools and septic tanks, as well as waste comparable in its nature to household waste generated by administrative, service, business and industrial activities (Waste Act, section 6)

Construction and demolition waste means waste from new construction and repairs and demolition of buildings or other fixed structures, civil engineering work or other corresponding construction (Waste Decree, section 1)

Biodegradable waste means food, garden, paper, cardboard and wood waste, and waste from crop and livestock production, the forest industry, municipal wastewater treatment plants and wastewater treatment in the food processing industry, and other waste that is capable of undergoing anaerobic or aerobic decomposition (Government Decree on landfills, section 3)

Biowaste means biodegradable food and kitchen waste from households, restaurants, caterers and retail premises, comparable waste from food processing, and biodegradable garden and park waste (Waste Decree, section 1).

Reduction of the quantity and harmfulness of waste means activity, before a product becomes waste, that promotes the re-use of the product, extends its lifetime or prevents the generation of waste in other ways, or reduces the amount of harmful substances in the product, or reduces the harmful impacts on human health and the environment of the waste generated (Waste Act, section 6).

Re-use means re-using the product, or a component thereof, for the purpose for which it was originally conceived (Waste Act, section 6).

Preparing for re-use means checking, cleaning or repairing recovery operations, by which products or components of products are prepared so that they can be re-used without further pre-processing (Waste Act, section 6)

Separate collection means the collection of waste where waste is kept separately by type and nature so as to facilitate recycling, other types of recovery or other specific treatment (Waste Decree, section 1)

Waste pre-processing means preliminary operations prior to the recovery of waste, such as, inter alia, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing (Waste Decree, Annex 1)

Recycling of waste means operations by which waste is reprocessed into a product, material or substance, either for the original or some other purpose; recycling of waste does not include recovery of waste as energy or the reprocessing of waste into fuel or material to be used for backfilling (Waste Act, section 6).

Recovery of waste means any operation whose principal result is waste serving a useful purpose in a production facility or elsewhere in the economy, so that it replaces other materials or objects which would otherwise have been used to fulfil a particular function, including waste being prepared to fulfil that function (Waste Act, section 6).

Disposal of waste means depositing the waste at a landfill, incineration without energy recovery, or some other comparable activity that does not constitute recovery, even where the secondary consequence of the operation is recovery of a substance, or of energy contained in the waste, including preparation of waste for disposal (Waste Act, section 6).

Material efficiency means that competitive products and services are produced using less material inputs while harmful impacts are minimized during the life cycle (Motiva 2017)[4].

4 Motiva. Materials Efficiency. Website. Accessed on 14 November 2017. https://www.motiva.fi/en/solutions/material_efficiency

From Recycling to a Circular Economy – National Waste Plan to 2023 is a strategic plan approved by the Government of Finland that sets out the objectives for waste management and minimising waste generation and its harmfulness, as well as the necessary measures to reach the objectives. The waste plan determines a target state for 2030 in support of a circular economy and proposes actions to achieve this. The plan also presents an estimate of the waste management capacity needed for the next planning period.

The four key areas selected to the National Waste Plan to 2023 are: construction and demolition waste, biodegradable waste, municipal waste, and waste electrical and electronic equipment. Detailed targets and measures are presented for these. The National Waste Plan is binding on the Government, but it also proposes actions to be taken by non-governmental actors. Collaboration among all stakeholders in the sector is needed to reach the objectives.

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