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# MEASURES OF WASTE PREVENTION

Waste Prevention Programme of the City of Graz



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# Measures of waste prevention

## Waste Prevention Programme of the City of Graz



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## Introduction

Dear Reader!

Waste. Everyone produces it, every day and in ever rising amounts. Currently, 560 kilograms are produced per person per year in Graz, and the trend is increasing. Measures for waste prevention are more in demand than ever before, as growing amounts of waste pollute our air, our water, the animals and the soil.

Due to new technologies and the merging of creative approaches with the economy, we now have numerous chances and opportunities to no longer treat our waste as an annoying left-over, but as a precious raw material. We can use this resource sensibly, or even more sensibly, not produce it in the first place. Whether it's an old cooking spoon, yesterday's newspaper, an empty can of goulash, or a used plastic bag; whether it is worn-out furniture, bicycles, electric devices or the 50s dress with a floral design – for many, not needed things, there are just as many possibilities to re-use, re-design, exchange or simply to repair and pass them on.

On the one hand, this catalogue shows what the City of Graz already offers in the areas Reduce, ReUse and Recycle. On the other hand, it provides numerous ideas for new, innovative projects that everybody can implement in his or her private or professional setting. Therefore, the catalogue is as much an action guideline for the departments and employees of the City of Graz, as it is a motivational catalogue for everyone who wants to improve our environment a little bit more.

Please do not hesitate to approach the Graz City Environmental Agency if you have any questions or ideas. Here, competent consultation and support are guaranteed.

*Lisa Rücker*

Councillor for Environment, Culture and Health in the City of Graz

## Content

1. Introduction .....	4
2. Goals of the waste preventions program by the City of Graz.....	5
3. Set of Measures: 7Rs of Waste Prevention.....	7
3.1. Reduce .....	9
3.2. Re-Use & Repair .....	14
3.3. Rethink .....	18
3.4. Redesign .....	23
3.5. Refuse.....	25
3.6. Recycle .....	27
4. Selection of Good Practices .....	29
5. Evaluation.....	42
6. Political Recommendations .....	44
7. Summary .....	47
List of Abbreviations .....	48
Bibliography .....	48
Link directory .....	49
List of images .....	52
List of videos .....	53

## 1. Introduction

In the European Waste Framework Directive, as well as in the federal- and state- waste management plan, **waste prevention was declared a predominant goal** in the waste hierarchy, above recycling or reprocessing. Prevention works **before products land in the waste management stream**. 90 percent of the environmental pollutants caused by products are emitted during the production phase, not during waste disposal. If the goals of waste prevention are to be achieved, it is essential to plan and implement measures outside scope of mere waste disposal.

The implementation of these measures requires an intensive cooperation between different groups of interest; politics, economy, and above all the civil society are called upon to contribute to the waste prevention together. Initiatives independent from actors of the waste management are becoming increasingly important. In order to reach an efficient and sustainable pursuit of waste prevention goals, cooperation, as well as a better **involvement of the whole civil society**, has to be promoted and the sensitization of the public must be achieved.

Still today, the ever-growing volume of the economy and elevating standards of living are coupled with rising consumption of resources and more waste production. Human consumption as well as the constant availability of products and services are aimed at **meeting society's needs**. However, often the same needs can be satisfied with a lower waste generation. Social and collective cooperation plays an increasingly central role: **sharing, exchanging, and borrowing** in form of product-service-systems and also collective working in a pleasant atmosphere (e.g. Repair Cafés, Sewing-Cafés) should gain importance and offer an **interesting alternative to classic ownership**.

The City of Graz implements many measures for waste prevention in its fields of activity at present and has furthermore already defined suggestions for additional measures. In the available waste prevention program, existing measures are listed, as well as additional, still unused possibilities and examples of waste prevention, which are summarized in a catalogue of measures. The focus deliberately lies on innovative initiatives and ideas outside classic waste management areas. Numerous good-practice examples should encourage the implementation of the suggested measures, as well as stimulate readers' own ideas.

### Technical note

This catalogue of measures contains numerous good-practice examples that are only briefly described. However, the digital version contains links to the respective project websites (the list with the links can be found in the attachment), on which additional information concerning the different examples is available.

By clicking on this button, you will be connected with the respective link:

1

## 2. Goals of the waste preventions program by the City of Graz

The goal of waste prevention is defined by the Waste Management Act (AWG 2002) as follows; the amount of waste has to be reduced and its pollutant content has to be kept as low as possible. This should contribute to the minimization of negative impacts on humans, animals and plants, as well as their environment. Thereby two priority waste streams are emphasized:

- the material flow, processes and products, that cause the biggest environmental and health impairment and
- scarce material resources.

The ultimate goal of a waste prevention program is, according to the federal waste prevention program, the decoupling of economic growth from the environmental impact of these waste streams.

The waste management plan by the City of Graz contains, following the waste management plan of the state, **three strategies** in the area of sustainable management of resources with different core areas and goals:

- The first strategy aims at sustainable resource management for the protection of the environment. The defined goals are conservation of resources and a liveable environment.
- The focus of the second strategy lies in a sustainable management of resources in society. The primary goals are: increasing awareness for the necessity of caring for our resources and waste prevention in the population, separated collection as a premise for re-use and utilisation, the realisation of the polluter pays principle in the social area and the promotion of the awareness for ecology and (energy) efficiency in the Graz City Environmental Agency.
- Sustainable resource management in the economy is the core of the third strategy, which follows the goal of efficient and sustainable resource management.

### Concrete goals for Waste Prevention in Graz

The total waste production per person per year in Graz is 560 kg. The share of possibly re-usable products that could be isolated lies at 3,2 kg per inhabitant (according to a feasibility study Re-Use



Steiermark), so less than one percent. Generally, it is extremely difficult to collect and keep track of how much waste is actually avoided and how much could be prevented, since there naturally are no records or collected data about waste that was not produced. Therefore, the waste prevention program should also provide a framework during the next two years. During this time period the potential waste prevention altogether and in single sectors should be further defined, concrete and measurable goals should be established, and available databases for an accompanying monitoring should be identified. In a few projects that are currently being realized, additional data is already collected; for example, at the “Re-Use Box” at “Ökoprofit” or at “Retourmöbel Steiermark”. More information on monitoring and indicators of measures can be found in chapter 4: Evaluation and 5: Political Recommendations.

The concrete goals of the waste prevention program by the City of Graz must not only be the implementation of the following measures and their continual evaluation, but above all an (even) stronger creation of awareness and spreading of this theme in the society. In this context the main focus of the next years should lie on the areas of reducing, re-using and repairing, as well as rethinking.

The full potential of waste prevention is, according to the Strategy for Waste Prevention of the European Commission<sup>1</sup>, only reachable by influencing concrete decisions in **different phases of the life cycle**: “conception, production, supply for the consumers and usage.” Only if the involved actors – and this also means the producing companies – take responsibility for the whole life cycle of their products, can the goals of waste prevention be successfully reached.

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<sup>1</sup> European Commission 2005

### 3. Set of Measures: 7Rs of Waste Prevention

In this catalogue, individual measures are allocated to 6 superior sets of measures. These were developed according to the waste hierarchy of the EU<sup>2</sup>.

Article 4 of the Waste Framework Directive outlines the five-step waste hierarchy, in which waste prevention is the highest priority, followed by the preparation for re-use, recycling, other recovery and disposal.

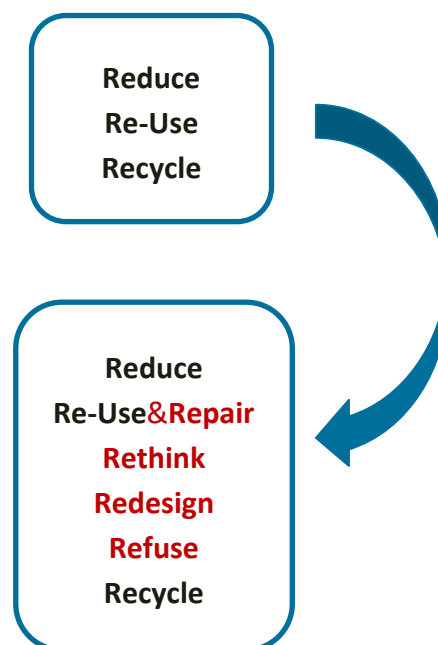


Figure 1: EU Waste Hierarchy (Reference: European Commission, 2015)

From this hierarchy the “3 Rs”, which are already broadly communicated, developed and have reached a high popularity (reduce, re-use, recycle).

These 3 Rs that are internationally and globally understood were then enhanced to “7 Rs” (reduce, re-use & repair, rethink, redesign, refuse, recycle) in order to organize these measures into the catalogue.

This should mainly serve to follow up the already well-internalized Rs. Due to the enhancement, new trends like the conscious renunciation of consumer goods (“refuse”) can be taken into account.



<sup>2</sup> Waste Framework Directive 2008/98/EC

In order to be able to communicate the resulting 7Rs better and easier, the creation of illustrations was planned. The decision of a waste prevention radial instead of a waste prevention pyramid is based on several reasons:

- By depicting the 7Rs in a radial circle, setting priorities and rating the single sets of measures should be consciously avoided.
- The borders between the single sets of measures are often difficult to define, which leads to the problem that measures cannot always be allocated to one set. This is also made visible through the pursuit of similar or same goals of different sets of measures.



Figure 2: 7R Waste Reduction Circle (Source: ARGE Abfallvermeidung, 2015)

The organization of the measures and recommendations to the respective sets of measures was chosen according to subjective decisions. The measures that were already implemented often fit to two or more categories and are accordingly listed in several sets of measures.

### 3.1. Reduce



Image 3: "Reduce" in the Waste Reduction Circle (Source: ARGE Abfallvermeidung, 2015)

#### Definition:

In the set of measures "reduce", one can find the classic measures for waste prevention, from food and daily consumer goods to construction waste.

Basically, waste prevention can be classified into two groups, namely **quantitative and qualitative waste prevention**:

- Quantitative waste prevention signifies the reduction of the amount of waste
- Qualitative waste prevention signifies the reduction of harmful or toxic components in products

Prioritised fields of demand of waste prevention are those areas that cause the biggest environmental and health damage throughout their life cycle. These are the areas of nutrition, building/living, chemicals, or plant operation. Further prioritised waste streams are those that contain high freights of precious resources (for example copper, tin, or platinum)<sup>3</sup>

Public authorities, as consumers and as employers, have a great influence on the production of waste, and at the same time a big responsibility, as they should act as a role model. As an employer, authorities should ensure to integrate the environmental criteria in public proposals, and as a consumer, authorities can, by the usage of reusable packaging and dishes or the double use of paper and similar products, contribute to waste prevention.

<sup>3</sup> Federal Environmental Agency, 2007




### Contribution to Goals:





The recommendation of measures under this category mainly contributes to the **conservation of resources** and to a **liveable environment**. On the one hand, the decrease of the amount of waste already reduces how much garbage has to be disposed of and could pollute the environment.

By the reuse of already used products (for example shopping bags, diapers, etc.) the needed amount of resources is reduced, and resources are treated more carefully and considerately. On the other hand, the qualitative waste reduction and thereby the reduction of environmentally harmful, toxic products, further contributes to the already named goals. The disposal of environmentally friendly products does not leave any permanent damage to the ecosystem thereby the measures also contribute to the preservation of biodiversity.

### Catalogue of Measures:

In the following measures are listed that depict the classic waste prevention measures in a tighter frame.

Existing Measures	
M1	<p><b>“Windelscheck“ (“Diapers Check“)</b></p>  <p>The purchase of reusable and washable diapers is promoted in the city of Graz since 1.1.2000. This way, disposable diapers that would go into the garbage can be avoided.</p> <p>Image 4: Diapers Check, (Photo: ©shootingankauf/Fotolia.com)</p>
M2	<p><b>“Graz-Tasche“ (“Graz-Bag“)</b></p>  <p>The Graz-Bag is made from clean old textiles that are sewn by hand by the “Fensterplatz-Initiative Heidenspass“. By the use of textile bags, single-use plastic bags are avoided.</p> <p>Image 5: Graz-Bag (Photo: City of Graz / Fischer)</p>
M3	<p><b>“ÖKOPROFIT“ (“ECOPROFIT“)</b></p>  <p>The Graz Environmental Agency provides ECOPROFIT with supporting Know-How for companies that dedicate themselves to a frugal handling of resources. For example, workshops and individual consultancy on environmentally relevant topics are offered.</p> <p>Image 6: ECOPROFIT Logo</p>

<p><b>M4</b></p>	<p><b>Initiative “G`scheit feiern“</b></p>  <p>The initiative “G`scheit feiern“ should promote the use of reusable tableware at events.</p> <p>Image 7: G`scheit feiern Logo (Source: State of Styria/A14)</p>
<p><b>M5</b></p>	 <p><b>Acceleration, Promotion and Implementation of Ecological Procurement for Public Institutions, Firms and Schools</b></p> <p>following the Austrian action plan for sustainable procurement 2010</p> <ul style="list-style-type: none"> <li>• Internal implementation: sustainable procurement in the departments of the House Graz</li> <li>• Implementation in areas of office material: increase of the office material catalogue with mainly ecological products</li> <li>• Increased promotion of ecological office materials for example via the initiative “Clever einkaufen” (“Clever shopping”) (for school and office materials) in schools and companies in Graz.</li> </ul> <p>Image 8: Sustainable Purchasing (Photo: @designsoliman / Fotolia.com)</p>
<p><b>M6</b></p>	 <p><b>Increased Awareness Raising</b> and providing of informational materials for the prevention of waste in households as well as providing further advice through waste consultants, for example in the areas of:</p> <ul style="list-style-type: none"> <li>• Food waste</li> <li>• Reusable products, etc.</li> </ul>  <p>Image 9: Info Card City of Graz (Photo: ©Alx/ Fotolia.com)</p>
<p><b>M7</b></p>	<p><b>Ecological Building Handbook of the Environmental Agency</b></p> <p>The "Ökologisch Bauen - Nachhaltig Leben" (“Ecological Building – Sustainable Living”) Handbook for Graz should show sustainable solutions in the building sector – among other things in the area of waste collection logistics – taking into account the environmental situation in Graz (the problem of particulate matter,...). Essentially, it deals with the question: Which decisions must be taken in the planning phase of an object, in order to have as sustainable a use phase as possible?</p>

## Catalogue of Measures 2015 - 2017

### Area of Sustainable Acquisition and Reusable Packagin

**ME1** Continuation of existing measures M1 – M7

**ME2** Further Acceleration and Advertisement of Reusable Packaging

- Increased purchase of reusable packaging, for example by introducing obligatory guidelines for the obtainment of beverages of the City of Graz
- Influence on the installation of multi-use drink machines
- Reduced single-use packaging at street festivals and other event

### Area of prevention of food waste

**ME3** Realisation of a Guideline for Passing On Food to Social Organisations like the Caritas (Marienstüberl) or the Vinzi-Bus – modelled after the guideline of BMLFUW in order to make possible passing on of food that is still edible but not suitable for the market

**ME4** Implementation and Support of **Public Campaigning and Initiatives Concerning Food Waste in Schools, Households and Companies**

- By funding initiatives in schools and firms as well as by private persons
- By providing companies with info material and schools with teaching material
- By supporting companies, teachers as well as interested private persons through waste consultants
- By organising film screenings of the movie “Taste the Waste”
- By promoting “Foodsharing” (putting excess food, or rather, food that is not needed anymore, online and giving it away; or alternately picking up surplus food from others)
- Though the promotion of “Fair-Teiler Kästen und Kühlschränken” (“Fair-Sharing Cupboards and Refrigerators”) in Graz (private and operational food waste should be reduced by sharing food that is not needed anymore and picking it up at “FairTeiler” cupboards and refrigerators)

**ME5** **Reduction of Food Waste in Our Own Activity** at city festivals, seminars, work discussions etc.

- E.g. via the implementation of internal guidelines for the organisation of events and work discussions

### Area of households

**ME6** **Production of Waterproof Stickers for the Cancellation of Advertisements**

Unaddressed advertising mail cause about 98 kg paper waste per year and household. The distribution of stickers could take place in the course of Christmas mailings to house management, housing cooperatives and tenant representatives

<b>ME7</b>	<b>Reduction of Free Disposable Bags in Supermarkets and Other Shops</b> <ul style="list-style-type: none"> <li>• Supply of reusable bags</li> <li>• Funding and advertising of companies that offer loose items</li> <li>• Creating of incentives for Christmas, Easter, Valentine’s Day or birthdays, which reduce the use of packaging material or rather show alternatives</li> </ul>
<b>Area of tourism</b>	
<b>ME8</b>	<b>Development of Guidelines and an Information Campaign to the Topic of Waste Prevention in Cultural Institutions</b> in cooperation with the culture department of the City of Graz, the department of economic and tourism development as well as directly in cooperation with cultural institutions <ul style="list-style-type: none"> <li>• on the topic of waste separation, reusable items, etc.</li> <li>• training of staff</li> <li>• reuse of stage sets e.g. in the opera or in the “Schauspielhaus”</li> </ul>
<b>Area of companies</b>	
<b>ME9</b>	<b>Exchange of Experiences</b> in companies and city administrations which conduct similar programmes



### 3.2. Re-Use & Repair



Image 10: “Re-Use and Repair” on the Waste Reduction Circle (Source: ARGE Abfallvermeidung, 2015)

#### Definition:

This set of measures contains preventive actions that support the **re-use** of used, but still functioning products that are utilized according to their original purpose.

The re-use of products leads to a lower resource and energy consumption in comparison to the production of new goods. An important keyword in this context is the “**preparation for re-use**”. Any recovery operation, including testing, cleaning or repair, that makes waste products and components functional again can be understood by this term. Concerned product groups are mainly furniture, electronic devices, textiles, sports- and leisure items.

The requirements for the re-use of products are that the goods on the market are of a high quality and durability and that those products were bought by their original owner but are still in a good condition when they are passed on. The currently usual consumption patterns, high costs for repair and the rising amount of products with a low quality and short durability (keyword “planned obsolescence<sup>4</sup>”) complicate the re-use of products. Re-use is seen as competition and not encouraged nor aimed for<sup>5</sup>. Cheap, new products are strongly promoted, while at the same time consumers are unsure of how long the old device will fulfil its purpose.

To increase the re-use of products, firstly, the consumers have to be addressed so that they, on the one hand, give away “good” products which they do not need anymore and, on the other hand, repair used products instead of buying new ones.

At the same time, new infrastructure that comprises the following areas has to be established

- Collection and storage

<sup>4</sup> Planned obsolescence: The duration of a product is reduced on purpose.

<https://de.wikipedia.org/wiki/Obsoleszenz>, 23.06.2015

<sup>5</sup> Federal Environmental Agency, 2008

- Transport
- “Preparation for re-use” and
- Shops for re-use products

For the increase of re-use and repair it is decisive, that the infrastructure is as convenient as possible and that the negative image of the use of second-hand is dropped.





In this set of measures, upcycling (substantial upgrading) and remanufacture (used device is brought to the quality standard of a new device/technological upgrading) are also included.

**Contribution to Goals:**

The measures under “re-use & repair” also contribute to the goals of **conservation of resources** and of a **liveable environment**. By the re-use of already used objects and the repair or broken but theoretically usable products leads to an enhancement of the durability and resources are saved that would otherwise be used up in the production of new goods. Furthermore, due to a prolonged utilisation phase, less waste that could pollute the environment is produced. Additionally, re-use and preparation for re-use imply the goal of a **separated collection as preparation for re-use and utilisation**. Furthermore, re-use and repair measures contribute to an **efficient management of resources** and a **sustainable economy**. By these measures, additional workplaces for socially deprived and disadvantaged people (including long-term unemployed and other classes, disadvantaged through disability, origin or education) are created. Efficient management of resources is achieved by a low expenditure of work and resources, which – if necessary – arise during preparation for re-use.

**Catalogue of Measures:**

Existing Measures	
<p><b>M8</b></p>	<div style="display: flex; align-items: flex-start;">  <div style="margin-left: 10px;"> <p><b>Repair Cafes</b></p> <p>In cooperation with social economic companies; including BAN, Bicycle, Heidenspass, BFI Beschäftigungsprojekt, RepairCafe Spektral Graz, Welthaus. Repair Cafes are meetings to which participants bring broken items which they repair with the help of experts. Tools and material are provided, and electricians, carpenters and bicycle mechanics help repairing. Furthermore, one can inform oneself about reparability in a comfortable atmosphere with coffee or tea.</p> </div> </div> <p style="font-size: small; margin-top: 10px;">Image 11: Repair Café – 11.04.2014 (Photo: City of Graz/Photo Fischer)</p>

<p><b>M9</b></p>	 <p><b>Re-Use Box</b> The Re-Use Box is a new system for the collection of reusable items like books, tableware, tools, toys, sports items, electronic devices etc. in the City of Graz. The Re-Use Box is a project of the Environmental Agency of the City of Graz, the ARGE Abfallvermeidung and the Federal State of Styria.</p> <p>Image 12: Re-Use Box (Photo: City of Graz/Photo Fischer)</p>
<p><b>M10</b></p>	 <p><b>Re-Use in Kindergarten</b> Toys and books that one child has outgrown can still bring joy to another child. For this reason, the project Re-Use in Kindergarten should encourage passing-on and re-using. Usable toys that are not wanted anymore can be given to kindergartens. The collected toys should be exchanged among the children.</p> <p>Image 13: Stuffed Animals (Photo: ©Otto Durst/ Fotolia.com)</p>
<p><b>M11</b></p>	 <p><b>Funding of Repair Initiatives</b> This funding serves the purpose of conservation of resources through re-use of basically usable items. Through this, the activity of repairing should again be emphasised stronger and collaborative repair initiatives be supported.</p> <p>Image 14: Repair Café (Photo: City of Graz/Photo Fischer)</p>
<p><b>M12</b></p>	<p><b>Re-Use Friday</b> In Recyclingcenter 2 in Sturzgasse 8, items, for which other people can still find usage, can be deposited for free, each Friday between 13 and 17 o'clock. The social economic integration company BAN-Ökoservice takes these items, refurbishes them if necessary and sells them again.</p>
<p><b>M13</b></p>	 <p><b>Ökobörse ("Eco-Exchange")</b> On the homepage of the Environmental Agency Graz, companies, associations and initiatives from Graz, that repair, lend, exchange products or offer ecological services, are listed. Through lengthened use of a product, waste production is prevented.</p> <p>Image 15: Eco-Exchange (Photo: ©Kurhan/ Fotolia.com)</p>

## Catalogue of Measures 2015 - 2017

<b>ME10</b>	<b>Continuation of existing measures M8 – M14</b>
<b>ME11</b>	<b>Support for the Establishment of Second-hand Markets/Re-Use Shops in Graz</b> In order to create a bigger offer of used, affordable products with tested quality and to create workplaces in the sector of social economy
<b>ME12</b>	<b>Creation of a Re-Use Area in the Recycling Center of Holding Graz</b> This measure also targets a higher selection of affordable used products by picking out reusable products from the waste stream.
<b>ME13</b>	<b>Imitation and Organisation of Give-Away and Exchange Markets</b> for clothing, children's items, crop seeds, etc.; because an item that is waste for one person can be of great use for someone else. Exchange markets are ideal for bringing people together in an uncomplicated manner and for promoting waste prevention.
<b>ME14</b>	<b>Establishment of a Repair Network in Graz</b> In addition to the already existing repair-cafes in Graz, which encourage repairing by oneself and also support it, commercial repair shops should be more included and used in order to show the customers alternatives to the "throwaway" culture.
<b>ME15</b>	<b>Creation of an Online City Map Including All Repair Companies and Workshops</b> in order to make the path to repair, as an alternative to throwing away, easier.
<b>ME16</b>	<b>Initiatives for Re-Use of Scenery in Permanent Sites of Cultural Interest</b> like the Opera of Graz, the "Schauspielhaus" etc.
<b>ME17</b>	<b>Support for Initiatives in the Sector of Trashdesign and Upcycling</b> This means the design or rather the production of high quality products like jewellery or furniture from recycled/used materials.
<b>ME18</b>	<b>Promotion of Online Exchange Platforms</b> For commodities of every kind. Furthermore, online exchange platforms are ideal for bringing people together in an uncomplicated manner and for promoting waste prevention.

### 3.3. Rethink



Image 16: „Rethink“ on the Waste Reduction Circle  
 (Source: ARGE Abfallvermeidung, 2015)

#### Definition:

This category contains the creation of awareness in the population concerning waste prevention. Rethinking in the direction of **“using instead of owning”** or rather the **sustainable change of consumption** through the participation in the “Sharing Economy” (renting, exchanging, sharing) are the goals of this set of measures. From the point of resource use we still live in a “throwaway society”, in which economic growth and a rising standard of living are directly connected to an increase in the required usage of resources and a greater waste generation. Participation in the economy (this means the production and providing of goods and services), as well as the consumption habits of people aim at the covering of needs. These needs can often be satisfied by a service, without having to buy a product<sup>6</sup>. An example: tableware for a party is needed. Now, one can decide to either buy cheap single-use plastic dishes or borrow reusable dishes for the day at a rental company. The so-called Share Economy or Sharing Economy describes the joint, short-term usage of resources that are not permanently needed; this means that these commodities are bought together, used or lent out. According to a study of the Chamber of Labour of Styria the fame and popularity of the Sharing Economy has strongly risen in the past years, as in addition to the aspect of sustainability, reduction of costs adds to its appeal.

In order to achieve rethinking in the population, measures for sensitization and information about the topic, as well as possibilities for action have to be provided. Here, numerous measures according to the diverse target groups, which include children to commercial enterprises, need to be available.



#### Contribution to Goals:

The recommended measures under the category “rethink” mainly contribute to **increasing awareness of the need for conservation of resources and waste prevention in the population** and furthermore,




<sup>6</sup> Federal Environmental Agency 2008

to the **promotion of awareness of ecology and (energy) efficiency in the environmental agency of Styria's capital city Graz**. Awareness is communicated through different methods of knowledge transfer, in the form of workshops, projects, events, consulting activities, up-to-date websites, brochures, magazines, etc. In turn, this enhancement of awareness contributes to the goal of **separated collection as preparation for re-use and utilisation** and to the **implementation of the polluter pays principle in the social area**. Furthermore, the creation of awareness has a positive impact on the goals of **conservation of resources** and a **liveable environment**, which can be achieved through careful and sustainable acting of each individual. The change in consumer behaviour according to the increased participation in the Sharing Economy via renting, exchanging and sharing of products instead of owning, also contributes to it.

### Catalogue of Measures:

Existing Measures	
<b>M14</b>	<b>Initiative „G'scheit feiern“</b> – see p. 8
<b>M15</b>	<b>Ökobörse</b> – see p. 13
<p>Through the following information and qualification initiatives, a high level of knowledge of resource protection and waste prevention should be achieved on all educational levels in the society:</p>	
<b>M16</b>	<p><b>Project “Waste Consulting in Schools”</b></p> <div style="display: flex; align-items: flex-start;">  <div style="flex-grow: 1;"> <p>Waste consulting in schools is a free service provided by the Environmental Agency of the City of Graz. Together with the students, waste relevant topics are discussed and worked on. The students are encouraged to participate in practical examples, they receive touchable materials, and through this, students deal intensively with the topics of waste prevention and waste separation.</p> </div> </div> <p style="font-size: small; margin-top: 5px;">Image 17: Waste Consulting in Schools (Photo: ©Christian Schwier/ Fotolia.com)</p>
<b>M17</b>	<p><b>Project “Waste Consulting in Kindergartens”</b></p> <div style="display: flex; align-items: flex-start;">  <div style="flex-grow: 1;"> <p>Also waste consulting in kindergartens is a free service provided by the Environmental Agency. Here, waste relevant topics are worked on in a playful manner.</p> </div> </div> <p style="font-size: small; margin-top: 5px;">Image 18: Kindergartens (Photo: ©BeTa-Artworks/ Fotolia.com)</p>

<p><b>M18</b></p>	 <p><b>Workshops for migrants and offer of multilingual information material</b> The waste separation information sheet and information booklets to illegal waste disposal and to substances of concern have been translated into 21 languages and can be obtained on the online portal of the environmental agency.</p> <p>Figure 19: ©vege/Fotolia.com</p>
<p><b>M19</b></p>	 <p><b>Waste Consulting for Companies (“ÖKOPROFIT“, “ÖKOPROFIT-Micro” and “ÖKOPROFIT-Tourism”)</b> In workshops and in individual consulting, the core topics of “conservation of resources”, “mobility”, “products and services” as well as “environmental guidelines” are being worked on.</p> <p>Image 20: Ecoprofit Logo (Source: City of Graz/ Environmental Agency)</p>
<p><b>M20</b></p>	 <p><b>Project Waste Separation in Housing Estates</b> The explanatory leaflet of the environmental agency Graz targets households and housing cooperatives as well as property managements. The goal of this project is to improve waste separation and by that reduce residual waste charges for housing complexes.</p> <p>Image 21: Action Day in Housing Estates (Photo: City of Graz/ Environmental Agency)</p>
<p><b>M21</b></p>	 <p><b>Campaigns and Information Stands on the Topics of Electro- and Electronic Devices (WEEE), Waste Prevention, Littering, Osteraktion etc.</b> These event-specific information campaigns take place on numerous occasions, in addition to the ongoing consulting services of the City of Graz.</p> <p>Image 22: Car-free Day, 2014 (Source: City of Graz/ Environmental Agency)</p>
<p><b>M22</b></p>	 <p><b>“GrazerUmweltZirkus“ (Environment Circus Graz)</b> Once a year, the City of Graz organises the Environment Circus Graz, which provides relevant organisations and institutions a platform and attracts numerous visitors.</p> <p>Figure 23: Grazer Umweltzirkus/Photo Fischer</p>
<p><b>M23</b></p>	 <p><b>Telephone-Hotline</b> Under the number 0316 / 872-4388 the citizens of Graz can call a service-hotline for current topics and projects.</p> <p>Image 24: Service Hotline of the City of Graz: (Photo: ©Matthias Enter/ Fotolia.com)</p>

<b>M24</b>	 <p><b>Folders on Current Topics</b> The environmental agency publishes folders on current topics which can also be downloaded on their website.</p> <p>Image 25: Info Card – Groceries (Photo: ©Stanisa Martinovic/ Fotolia.com)</p> 
<b>M25</b>	 <p><b>Initiative “Give me the Rest 2014 + 2015” in the Stadtpark</b> The initiative aims at creating more awareness for the problem of waste in the Stadtpark. “Give me the Rest 2014 + 2015” searches for volunteers that try to show visitors the right handling of waste in a charming manner. Additionally, there will be mobile rubbish bins that will be distributed in a tent in front of the Parkhaus. Furthermore, trainings and the creation of awareness for the people on-site concerning waste separation and waste prevention are done by waste consultants.</p> <p>Image 26: Initiative “Give Me The Rest 2014” (Photo: Holding Graz)</p>
<b>M26</b>	<p><b>Graz Environmental Award</b> The Environmental Award 2014 was given under the theme “Reduce, Re-Use, Recycle“. The Graz Environmental Award is a yearly prize for projects of schools, private persons and companies, and emphasises a different focus each year.</p>

### Catalogue of Measures 2015 - 2017

<b>ME19</b>	<b>Continuation of existing measures M14 – M23</b>
<b>ME20</b>	<p><b>Creation and Promotion of a Leaflet Listing All Rental Companies in Graz</b> Rental companies offer technically high standards, user- and repair-friendly products, with which the consumers can save high purchase costs as well as outsource repair and maintenance. However, it is important that transports for borrowed devices are kept as short as possible, because otherwise the ecological advantage of renting is reduced.</p>
<b>ME21</b>	<p><b>Continuation of the “Restl-Festl”</b> The “Restl-Festl” was a contribution of Styria which happened in the frame of the Action Week “Sustainable Austria”, in cooperation with the Federal State of Styria, the City of Graz and the non-profit “ARGE Abfallvermeidung” and which aimed to counteract food waste.</p>
<b>ME22</b>	<p><b>Implementation of Further Initiatives and Projects in Schools and Training Facilities, Support for Teachers</b> For instance, on the topic of food waste or to the use of old packaging that one can find in schools which could be used as handicraft materials etc.</p>



<b>ME23</b>	<p><b>A Yearly Award on the Theme of Waste Prevention</b></p> <p>Similar to the environmental award, a prize for projects and initiatives which dedicate themselves especially to this topic would pose another contribution to creating awareness in the area of waste prevention.</p>
<b>ME24</b>	<p><b>An Online Infocard on the Topic of Bioplastic Bags,</b></p> <p>which is offered to the customers when shopping – as another measure in the area of PR on the topic of waste prevention.</p>
<b>ME25</b>	<p><b>Organisation of Workshops for Employees on the Topics of Waste Separation and Waste Prevention</b></p> <ul style="list-style-type: none"> <li>• In public institutions</li> <li>• In private companies</li> <li>• In cultural institutions etc.</li> </ul>
<b>ME26</b>	<p><b>Organisation of Events under the Theme Waste Prevention</b></p> <p>For example, collective cooking with “rescued” food.</p>
<b>ME27</b>	<p><b>Organisation of Contests on the Topic of Waste Prevention,</b></p> <p>in order to include citizens in the development of creative ideas for the marketing of waste prevention.</p>
<b>ME28</b>	<p><b>Extension of the Homepage of the Environmental Agency of the City of Graz in the Area of Waste Prevention</b></p> <p>With tips and information, teaching materials etc. This homepage could also be designed as a platform in which private persons as well as organisations can contribute and present their initiatives, projects and actions for waste prevention.</p>

### 3.4. Redesign

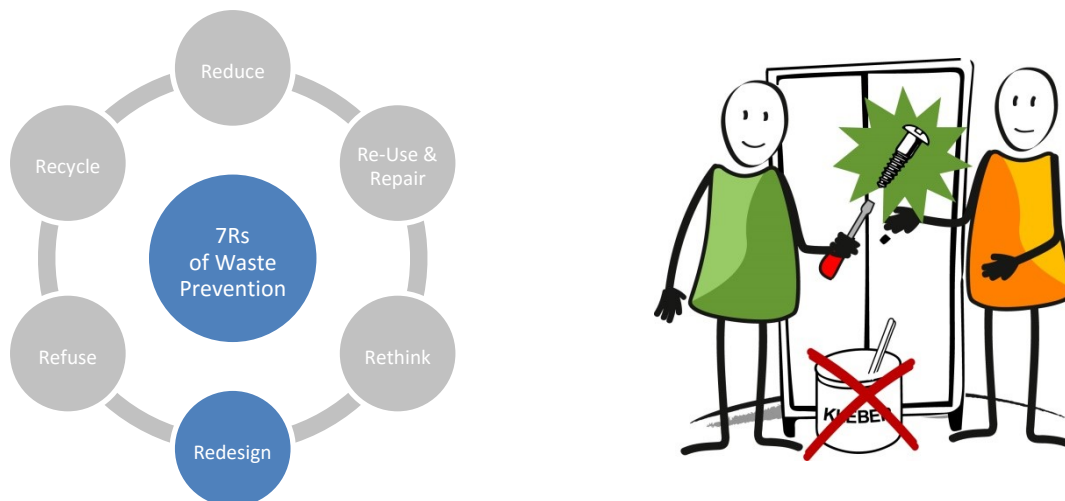


Image 27: “Redesign” on the Waste Reduction Circle of the City of Graz (Source: ARGE Abfallvermeidung, 2015)

#### Definition:

Under the category “Redesign” are measures that target the elimination of the planned obsolescence and the qualitative waste prevention in the sense of a pollution-free design – summarized in the term “eco-design”.

Many products and materials that land in the waste stream can be used for the production of new, upgraded or improved products. However, it is decisive that quality standards and environmental criteria for design or redesign are followed. In the eco-design-directive of the EU<sup>7</sup>, eco-design is defined as “the consideration of environmental requirements during product development with the goal of improving the products’ environmental compatibility during its whole life cycle”. Features of eco-design are material- and energy-efficiency, low emissions, durability, possibility for repair, as well as recycling friendly and waste avoiding design. The project “Cradle to Cradle” goes under the term eco-design: as with the natural ecosystem, economic and technical processes are designed so that they do not have negative impacts on human and the environment and run in cycles. The city of Graz was involved in an EU-project from 2009 to 2011 which had the goal of the implementation of this thought in the economy, as well as the construction of an Austrian network. In Austria the eco-design-directive was realized in 2007, including the eco-design requirement for energy-using products.

Relevant products in energy-use have to comply with so-called “Implementation measures”, get a CE-label, and have an EC-declaration of conformity before they can be introduced to the market. To show environmentally relevant criteria of a product, there are various seal of approvals, for instance the Austrian Environment Sign, the FSC-Seal for products made from wood, the green dot, and many more.

<sup>7</sup> EU directive 2009/125/EC article 2/23

### Contribution to Goals:

It is necessary to design products so that they can finally be used for a longer time and – if not working anymore – be disposed as environmentally friendly as possible or go back into the cycle of materials. In that way, the goals of **conservation of resources** and a **liveable environment** are pursued. In Redesign the responsibility for the ecological impact of a product during use and also in the following phase, lies on the producer. This serves the **implementation of the polluter-pays-principle in the social sector**, by which the costs of the use and disposal phase are already included in the design and production process. Furthermore, Redesign measures contribute to an **efficient resource management and a sustainable economy**. Efficient resource management is achieved by already handling the resources carefully and sustainably during the design phase. It contributes to a sustainable economy also, because new workplaces are created in the area of eco-design.

### Maßnahmenkatalog:

Bestehende Maßnahmen	
M27	Graz-Bag – see p. 7
Maßnahmenplan 2015 - 2017	
ME29	<p><b>Publishing a Collection of Links to Companies That Offer Redesign on the Website of the Graz Environmental Agency</b></p> <p>In order to give interested people the possibility of quick access to contact information of these firms.</p>

### 3.5. Refuse



Image 28: „Refuse“ on the Waste Reduction Circle (Source: ARGE Waste Management, 2015)

#### Definition:

Refuse is the most extreme form of waste prevention. The term describes a certain lifestyle, namely the partial refusal of the consumer society and by that consciously not using of consumer goods. The motto is to omit whatever is not needed. More and more people follow this motto and decide for an alternative lifestyle, they can be summarized under the term **LOHAS**. LOHAS (Lifestyles **O**f **H**ealth **A**nd **S**ustainability) are people who practice a lifestyle which is mainly focused on health consciousness, following the principles of sustainability, but also on the relationship between technology and nature, individualism and community spirit, pleasure, responsibility and also includes numerous other value-orientations. Typically, people with an above-average level of education and an above average salary are found in this group. A subgroup of these LOHAS are the so-called “**LOVOS**” – Lifestyles **O**f **V**oluntary **S**implicity. LOVOS act according to less lavish life-, production- and consumer-models. This group is very heterogeneous and reaches from “consumption-critical average consumers” to “total dropouts”. Together, these people try to counteract the constraints of daily life by not consuming, by paying more attention and by an exact observation of ones own consumer behaviour, in order to lead a more self-determined and fulfilled life.<sup>8</sup>

There are numerous possibilities or areas in which waste can be consciously reduced by not consuming. For instance:

- Not using disposable products and packaging, like plastic bags
- No mail advertising
- No promotional giveaways
- No shopping without shopping list
- ...

<sup>8</sup> Mert, 2011

Refusal can be voluntary, however it can also be forced by legal requirements, prohibitions or an according pricing can be introduced. To promote and implement the refusal of not necessarily needed products in the society, the support of the economy and politics is essential. These institutions have to recognise that economic growth is not necessarily connected to the consumption of resources and communicate this to the public. Economic growth should be achieved through more recycling, re-use and reintroduction of products into the cycle of materials or also through technological progress in the area of production, design and logistics.

**Contribution to Goals:**

By consciously not using consumer goods, a precious contribution to achieving the goals of **conservation of resources** and a **liveable environment** is made. Refuse means that resources are not needed, and by that, waste that could lead to an environmental impact is not produced.

**Refuse is the decision of each individual and due to that, lies only slightly within the competence of the City of Graz** – because of that, no concrete recommendation of measures can be made. The City can, however, give **impulses and encouragement** via educational and public relations work and **show civil society the possibilities that it has**.

### 3.6. Recycle

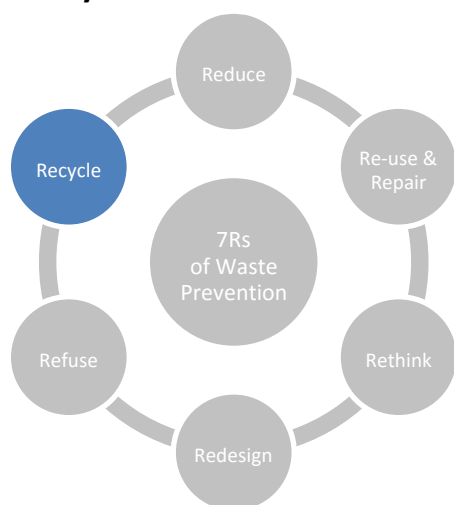


Image 29: „Recycle“ on the Waste Prevention Circle (Source: Arge Abfallvermeidung, 2015)

#### Definition:

Recycling signifies the return of waste from production and consumption into the economic cycle. Used materials are industrially reprocessed, either for their initial use or for another purpose. Energy recovery is excluded from this definition.<sup>9</sup> Recycled materials are mainly glass, paper, plastics and metals. Only if the materials are reintroduced to the market at their original quality can one speak of a cycle. From an economic point of view, material recovery is interesting, since disposal costs can be saved, new economic sectors for the processing of recycling materials are created, and the purchase of partially expensive primary materials can be avoided. Furthermore, it can contribute to the reduction of energy use during the refurbishment of materials, it supplies materials that can be used for eco- efficient products and helps to improve the image of these products but also the producing companies in general. In the sector of packaging material, but also for iron and steel, high rates of material recovery are achieved. However, there are still areas in which the recycling rate can clearly be increased, for instance in construction waste. In order to raise the recycling quotas, it is decisive to create a corresponding market and obligatory rules to ensure the obeying of quality criteria so that the quality of the reintroduced materials is transparent and to minimize risk for the purchaser.

The industrial recovery of used materials for their initials usage or a different purpose contributes to the goals of **conservation of resources** and a **liveable environment**. This necessitates separated collection, contributing to the goal of a **separated collection as preparation for re-use and utilisation**. Furthermore, an **efficient management of resources** and a **sustainable economy** is promoted, since already used materials are refurbished, so that fewer resource costs arise than during new production. Additionally, important workplaces in the recycling sector are created.

#### Statement:

<sup>9</sup> EU directive for ecodesign 285/10

In the European Waste Framework Directive, waste prevention is depicted as the most efficient and sustainable form of the waste hierarchy – see image 9. Waste prevention includes the reduction in quantity of resources on the one hand, and on the other hand, the reduction of their toxicity before recycling, composting, energy generation and landfilling are considered.<sup>10</sup>

By that, Recycling is subordinate to waste prevention and is therefore not a subcategory of waste prevention. However, by the returning of used materials into the economic cycle, recycling can be implicitly regarded as a form of waste prevention. By that, recycling contributes to reaching the goals of **conservation of resources** and a **liveable environment**, which makes categorizing recycling as a form of waste prevention indispensable.






Figure 30: EU Waste Hierarchy (European Commission – General Environment, 2012, p.9)

By that, Recycling is subordinated to the waste prevention and is therefore no subcategory of waste prevention. However, by the returning of used materials into the economic cycle, recycling can be implicitly regarded as a form of waste prevention. By that, recycling contributes to the reaching of the goals of conservation of resources and a liveable environment, which makes the naming of recycling as a form of waste prevention indispensable.




<sup>10</sup> European Commission – General Environment, 2012



## 4. Selection of Good Practices

Good Practices Reduce <sup>11</sup>	
<p><b>Ecological Acquisition</b></p> <ul style="list-style-type: none"> <li>Initiative <b>Clever Purchasing for the Office</b></li> <li>Initiative <b>Clever Purchasing for the School</b></li> </ul> <p>The initiatives of the ministry of life and the Chamber of Commerce Austria aim at making access to environmentally friendly office and school articles easier, aim at raising the demand and at informing about the advantages of national eco-labels, other labels and norms for purchase.</p>  <p>Image 31: Clever Purchasing for the School (online)</p>	<div style="background-color: #00728f; color: white; width: 20px; height: 20px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">1</div> <div style="background-color: #00728f; color: white; width: 20px; height: 20px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">2</div>
<p><b>Cancellation of Advertisements</b></p>  <p>Image 32: The Stop Pub Sticker (pdf)</p> <p><b>Stop Pub Campaign in France:</b> the initiative started in the year 2004, implemented by the French Ministry for Ecology and Sustainable Development. Stickers that should reduce mailshot were given out. Stickers are accessible in districts, department stores and NGOs or also downloadable on the website of the ministry.</p> <p><b>Catalog Choice in Arlington/Virginia:</b> This project also follows the goal of decreasing the number of unaddressed mailshot, however they do not use stickers (no waste production). Instead, one has the possibility to cancel any marketing material, brochures etc. online.</p>  <p>Image 33: Catalog Choice (online)</p>	<div style="background-color: #00728f; color: white; width: 20px; height: 20px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">3</div> <div style="background-color: #00728f; color: white; width: 20px; height: 20px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">4</div>
<p><b>Reduction of Disposable Bags in Shops</b></p> <ul style="list-style-type: none"> <li><b>La City Bag in Los Angeles:</b> Since 2004 there is prohibition of plastic bags in department stores. Alternatively, paper bags can be bought for \$0.10. Furthermore, reusable bags have to be offered and promoted. Reusable bags are also sold in shops and given out at events.</li> <li><b>Custom Grocery Bags:</b> This example is an online shop for wholesalers and private customers which sells reusable shopping bags. This possibility is an interesting alternative or supplement to the classic distribution of reusable bags.</li> </ul>	<div style="background-color: #00728f; color: white; width: 20px; height: 20px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">5</div> <div style="background-color: #00728f; color: white; width: 20px; height: 20px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">6</div>

<sup>11</sup> Die Quellenangabe der in Kapitel 4. „Auswahl an Good Practice Beispielen“ gezeigten Abbildungen (Abbildung 31-60) und Videos (Video 1-8) finden sich im Linkverzeichnis unter der im jeweiligen rechten blauen Kästchen angegebenen Nummer.



<p><b>Reduction of Paper Waste in Universities</b></p> <ul style="list-style-type: none"> <li>• <b>Office Paper Cut Campaign:</b> At the University of Alberta in Canada, tools were developed to easily define the actual financial costs and environmental impact of the current paper consumption and to reduce the amount of used paper accordingly.</li> </ul>  <p>Image 34: Office Paper Cut Campaign – University of Alberta (online)</p>	<p>7</p>
<p><b>Waste Prevention in Households</b></p> <ul style="list-style-type: none"> <li>• <b>wrapsacks:</b> This example shows the online sale of reusable gift wrap</li> </ul>  <p>Video 1: wrapsacks</p> <ul style="list-style-type: none"> <li>• <b>reuseit homepage:</b> The website promotes reusable products in private households, like fabric napkins, refillable bottles, lunch boxes and a lot more.</li> </ul>	<p>8</p> <p>9</p>
<p><b>Promotion of Tap Water</b></p>  <p><b>Drinking Fountains in Venice:</b> Since 2008 there are several city maps of Venice in which drinking fountains are indicated in order to especially motivate tourists to refill their water bottles.</p> <p>Video 2: Drinking fountains (online)</p>	<p>10</p>
<p><b>Food Waste at City Festivals</b></p>  <p><b>“Eintüten statt Wegwerfen”:</b> This initiative comes from the Evangelical Church of Westphalia. “Einpacktüten” (“doggy bags”) serve the purpose of taking leftover bread, cake, fruits etc. home from city festivals, seminars, work discussions or other leisure activities.</p> <p>Video 3: the wrapping bag (online)</p>	<p>11</p>

<p><b>Guideline “Passing on of Food to Social Institutions”</b></p> <ul style="list-style-type: none"> <li>• <b>Guideline for Passing on Food to Social Institutions</b>, published by the Federal Ministry of Agriculture and Forestry, Environment and Water Management (BMLFUW). This guideline was created in cooperation with the Federal Ministry for Health in the frame of the federal waste prevention programme, published in January 2015.</li> </ul>  <p>Image 35: Donating groceries to social projects (pdf)</p> <ul style="list-style-type: none"> <li>• <b>Guideline for Passing on Food</b>, developed by the ECR (Efficient Consumer Response) Austria. This guideline was written in the year 2011, in cooperation with companies from the consumer goods sector with social institutions.</li> <li>• <b>Project “Naschmarkt” in Vienna:</b> This example shows a cooperation of sellers from the Viennese Naschmarkt with the “Wiener Tafel” (Viennese Table) in order to offer fresh food to people at risk of poverty. Since access to healthy food is more difficult for people who are at risk of poverty, social institutions mainly call for milk products, cold meats, bread and other food, in addition to fresh fruits and vegetables.</li> </ul>	<p>12</p> <p>13</p> <p>14</p>
<p><b>Prevent Food Waste in Households</b></p> <ul style="list-style-type: none"> <li>• <b>Foodsharing:</b> Excess, or rather, unneeded food can be offered online on the Foodsharingwebsite and given to someone for free.</li> </ul>  <p>Figure 36: myfoodsharing.at (online)</p> <ul style="list-style-type: none"> <li>• <b>“Fair-Teiler Kästen &amp; Kühlschränke” (Fair-Share Cupboards and Refrigerators) in Graz:</b> The goal of this initiative is the sharing of food that is not needed anymore. People who have excess food can bring it to Fair-Share Cupboards and Refrigerators and make it available for others.</li> </ul>	<p>15</p> <p>16</p>

<p><b>Reusable Packaging</b></p> <ul style="list-style-type: none"> <li>• Ecological Procurement Programme of the City of Vienna “<b>ÖkoKauf</b>” (<b>EcoPurchase</b>) <b>Vienna</b>: The goal is to orientate the purchasing of goods, products and services in all sectors of the city council after ecological viewpoints. The reason for this is that the city of Vienna pays € 5 billion for the purchase of goods, products and services, five times as much as all Viennese households together. Therefore, criteria catalogues, position papers, studies and sample folders were developed.</li> <li>• <b>Austrian Action Plan for Sustainable Public Procurement (NABE)</b>: Information about ecological core criteria of different product groups, as well as best practice examples and information events.</li> </ul>	<p>17</p> <p>18</p>
<p><b>Area of Construction Waste</b></p> <ul style="list-style-type: none"> <li>• Guideline for low-waste Building: According to MA22 – the Viennese Department of Environmental Protection – more than 50% of all waste in Austria is produced in the building sector. Since January 1st 2011, the creation of a waste concept is obligatory for bigger construction projects in Vienna. With the help of such a concept, processing-orientated termination techniques, effective waste separation systems, waste prevention measures and recycling possibilities should be taken into account and be applied.           <ul style="list-style-type: none"> <li>– <b>Pattern-Waste Concept</b></li> <li>– <b>Guideline for Construction Waste Separation</b></li> <li>– <b>RUMBA (Guideline for Environmentally Friendly Construction Project Completion)</b></li> <li>– <b>Specifications for Dismantling – Project Report 2003</b></li> </ul> </li> </ul>	<p>19</p> <p>20</p> <p>21</p> <p>22</p>
<p><b>Waste Prevention in Companies</b></p> <p><b>EcoBusiness Plan Vienna</b>: The EcoBusiness Plan Vienna offers advisory services for companies in order to save costs through environmentally friendly measures. The consultants should help companies to generate saving potential in the sectors of energy, waste and resources.</p>	<p>23</p>

## Good Practices Re-Use & Repair

<p><b>Re-Use Initiatives</b></p> <ul style="list-style-type: none"> <li>• “<b>Klamottentausch</b>” (<b>Clothes Exchange</b>): This is an online-platform which informs about exchange parties and events in Germany.</li> <li>• <b>Give and Take Day</b>: The North London Waste Authority organises so-called “Give and Take Days” together with the London Community Resource Network. At these events, which happen on a regular basis, people can bring household items that they do not need anymore and exchange them with others.</li> </ul>	<p>24</p> <p>25</p>
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Image 37: Give and Take Day (North London Waste Authority) (online)

- **Recycling and Re-Use Park (Kretsloppsparken Alelyckan) in Göteborg:**



Here, the possibility exists, to bring waste to recycle it (mainly electronic, environmentally harmful and unwieldy items), or to buy used products (mainly used building material). This initiative already exists since 2006 and is financed through the earnings of selling used products. According to a study from the year 2011, 360 tons of waste per year can be

avoided in that way.

Image 38: Alelyckan Re-use Park, Göteborg (pdf)

- **Clothes Library (Lånegarderoben) in Stockholm:**



A library for clothes in which high quality clothes can be borrowed for a membership fee of 70€ per half a year for a maximum of 4 weeks.

Image 39: Founder Hanna Nyberg in Lånegarderoben (online)

**Online Second-Hand Market**

- **“Wiener Web-Flohmarkt” (Viennese Web-Flea Market):** An online platform for selling, exchanging or giving away of usable items.

28



Image 40: Viennese Web-Flea Market (online)

- **“Kleider Kreisel” (Clothes Spinning Top):** An online platform with 8,5 million members all around the globe, providing the possibility of selling or giving away clothes. Also emphasises community building.

29



Image 41: Kleider Kreisel (online)

- **Genbyg in Denmark:** An online shop for used construction materials (doors, windows, lighting, bricks, tiles, interior furnishing...)

30

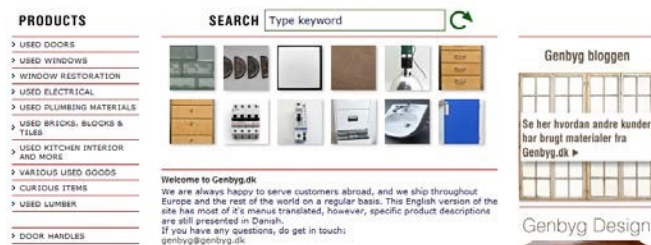


Image 42: Genbyg Online Shop (online)

## Repair Network and Open Workshops

- **“Reparaturnetzwerk” (Repair Network) in Vienna:** In the repair network Vienna, which is taken care of by the waste consultancy, commercial repair companies offer repair services and meet obligatory criteria.



Image 43: Repair Network in Vienna (online)

- **Online City Map with all Repair Shops in Vienna:** On the website of the City Administration of Vienna all repair shops are displayed on a city map.

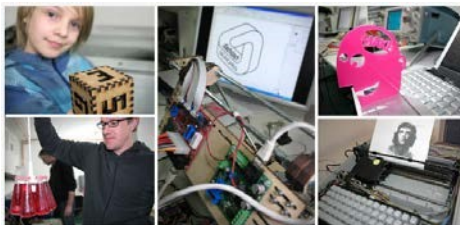
- **“Haus der Eigenarbeit” (House of Individual Work) in Munich:**



Professionally equipped and attended open workshops (wood, ceramic, metal etc.) for do-it-yourself, with expert advice, course offerings, exhibitions, readings and a café for creative breaks.

Video 4: House of individual work

- **FabLab in Munich:**



A Fabrication Laboratory is an open high-tech-workshop. The FabLab in Munich contains 3D Printers, two lasercutters, CNC milling and an electronic section, which can be freely used.

Image 44: FabLab in Munich (online)

- **Bikekitchen in Munich:**



The Bikekitchen Munich is a charitable association for the promotion of the cycling culture. The association offers courses about cycling culture and the possibility to repair one's bicycle with support from the team.

Figure 45: Bikekitchen in Munich (online)






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<p><b>Sewing Workshop</b></p>  <p><b>Sew Good in Cheshire:</b> Workshops for learning sewing techniques in order to make new clothes, bag etc. or to renew old ones.</p> <p>Image 46: Sew Good in Cheshire (online)</p>	<p><b>36</b></p>
<p><b>Trashdesign and Upcycling</b></p> <ul style="list-style-type: none"> <li> <p><b>“Berliner Kreativnetzwerk Kunst-Stoffe” (Creative Network Plastic/Stuff of Art in Berlin):</b> Leftover and used materials like fabrics, advertising plastic tarpaulin, wood, metal, deco material etc. are collected and made accessible as a sustainable resource and given to creative users. Furthermore, open workshops, repair cafés and workshops on sustainability topics are offered.</p>  <p>Video 5: What is Plastic? (online)</p> </li> <li> <p><b>“TrashDesignMaufaktur” (TrashDesignManufacture) in Vienna:</b> Here, design of elegant and high-quality jewellery, furniture and accessories out of leftovers or recycled pieces of electronic equipment. The products are produced together with people who have been searching for a job for a long time.</p>  <p>Image 47: TrashDesignManufacture in Vienna</p> </li> </ul>	<p><b>37</b></p> <p><b>38</b></p>
<ul style="list-style-type: none"> <li> <p><b>ReBlock:</b> The Styrian companies EnGarde, Sirius Five and The IF joined together in order to produce new notepads from old, single-side printed sheets of paper, in the frame of the project “ReDesign+”.</p>  <p>Image 48: ReBlock – Every Sheet Deserves A Second Chance (online)</p> </li> </ul>	<p><b>38</b></p>
<ul style="list-style-type: none"> <li> <p><b>“wienzwoelf Tasche” (Viennatwelve Bag):</b> This bag is produced from used materials like old duffle bags, used parachutes, recycled advertising plastic tarpaulins, indestructible fire hoses, water-repellent wool felt, rivets and carbines.</p>  <p>Image 49: wienzwoelf Bag (online)</p> </li> </ul>	<p><b>39</b></p>

- **TetraProject:**

In the frame of Tetra Projects, old beverage cartons were used for the design of new products like the TetraCase – a tablet-PC casing – or the TetraBench – a bench or beach chair.

41



Image 50: TetraCase (links) and TetraBench (right) (online)

- **“Kunst vom Rand” (Art from the Edge):**

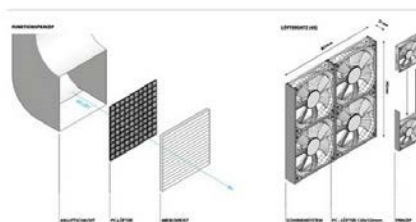


In this initiative old bibles are reused as new furniture, sound insulation etc.

42

Image 51: Kunst vom Rand (online)

- **Project Exhaust Air Power Plant of mtp:**



In this project, old PC-fans are converted to exhaust air power plants. The thereby gained energy is used for the lighting of advertising signs.

43

Image 52: Exhaust Air Power Plant from PC-fan (online)

- **Romani’s Second-Hand Trade:**



Eszter Agnes Szabo and Rozalica Tóvaj create new designs from discarded t-shirts. Thereby, the initiators focused on creativity, recycling and slow design.

44

Image 53: Designer fashion from discarded t-shirts (online)



**Good Practices Rethink**

45

**Projects in Schools and Training Institutions for Prospective Teachers on the Topic of Food**

- **Travelling Exhibition “more or less Waste”:**



The travelling exhibition “More or Less waste” deals with the topic “ecological backpack” in an interactive and playful way. The main focus lies on the topic of resource consumption and waste prevention. The students fish for environmentally friendly packaging, repair simple commodities, occupy themselves with different textiles, learn about which fruits grow during which season and a

lot more.

Image 54: Travelling Exhibition “More or Less Waste” (online)

46

- **School project “Teller statt Tonne” (Plate instead of Waste):**



Includes a practical project day at a farm, as well as a theoretical introduction and follow-up. During the practical part, sorted out vegetables are collected and afterwards together with the teachers cooked and eaten.

Image 55: School project “Teller statt Tonne” (Plate instead of Waste) (online)

47

- **REdUSE – less is more:**



In the frame of “Reducing Resource Use for a Sustainable Europe” – short REdUSE – GLOBAL 2000 and partner organisations in Hungary, the Czech Republic, France, Belgium, Great Britain, Togo, Cameroon, Brazil and Chile will get active in the next few years in reducing the consumption of resources in Europe. Thereby, a multimedia event for schools was developed (45 minute movie + following discussion).

Image 56: Multimedia Event REdUSE (pdf)

48



- **The Initiative “Öko-RitterInnen” (Eco-Knights) and ClimateCooler:**



In Viennese youth centres, children and teenagers were enthused, supported, and educated about saving energy in households, waste prevention, nature protection and sustainable ecological approaches from 2008 until 2010. Furthermore, ecological aspects of sustainability and possible

fields of activity in the ecological sector for actors in the area of employment promotion were worked on.

Image 57: The Initiative “Öko-RitterInnen” (Eco-Knights) and ClimateCooler (online)

<p><b>Joint Cooking of “Saved” Food</b></p> <ul style="list-style-type: none"> <li>• <b>Disco Soup/”Schnippeldisko” (Scrap Disco):</b></li> </ul>  <p>The grassroots organisation Slow Food organises joint cooking of a soup from “saved” food with live music and in a festive atmosphere.</p> <p>Video 6: Discosoep Amsterdam (online)</p>	<p><b>49</b></p>
<p><b>Changing the Consumer Behaviour</b></p> <ul style="list-style-type: none"> <li>• <b>WASTEPrevKit project in Helsinki:</b> Content of this project was the creation of teaching material on waste prevention at all educational levels, consultancy and information activities of households and the demonstration of best practice examples (“Smart Ways of Action”) for companies. The benchmarking tool “Petra” served the purpose of comparing the achieved waste reduction of different companies. The project lasted from 2005 until 2008 and was supported as a best practice example by the LIFE programme of the EU.</li> </ul>	<p><b>50</b></p>
<p><b>Competitions to the Topic of Waste Prevention</b></p> <ul style="list-style-type: none"> <li>• <b>Love Food Film Competition:</b></li> </ul>  <ul style="list-style-type: none"> <li>▪ This movie competition of the “Love Food Hate Waste” initiative is concerned with the topic of food waste prevention.</li> </ul> <p>Video 7: Love Food Film Competition</p> <ul style="list-style-type: none"> <li>• <b>Waste: The Bigger Picture:</b> In the north of London, the initiative of the North London Waste Authority called for a poster competition between students on the topic of waste prevention.</li> </ul>	<p><b>51</b></p> <p><b>52</b></p>

<p><b>Homepage to the Topic of Waste Prevention with Tips and Information</b></p> <ul style="list-style-type: none"> <li>• <b>Don't let Devon go to Waste:</b> This website provides the citizens of Devon and England with extensive information and innovative ideas on the topic of waste prevention ("Reduce-Reuse-Recycle") since 2002. A very extensive collection of recommendations and initiatives have been presented.</li> </ul>	<p><b>53</b></p>
<p><b>Renting Workspaces</b></p> <ul style="list-style-type: none"> <li>• <b>The Workspace eeza. (Development and Investigation of Contemporary Means of Expression):</b></li> </ul> <div data-bbox="308 768 572 1052" data-label="Image"> </div> <p>In Graz one can rent this workspace for the development or production of workpieces, prototypes, design objects or art projects. Furthermore, workshops, professional instruction and consultancy are offered.</p> <p>Video 8: eeza. (online)</p>	<p><b>54</b></p>

**Good Practices Redesign**

<p><b>Online Database of Environmentally Friendly Construction Material</b></p> <ul style="list-style-type: none"> <li>• <b>BASTA-Guidance to Sustainable Construction Materials:</b> The Swedish online database deals with environmentally friendly construction material.</li> </ul> <div data-bbox="296 1509 1023 1653" data-label="Image"> </div> <p>Image 58: BASTA - Guidance to Sustainable Construction Materials</p>	<p><b>55</b></p>
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### Ecodesign Tool for Products

56

- **ecolizer designtool in Belgium:** This ecodesign tool for products should make it possible for all designers and companies to calculate the environmental impact of all products over their whole life cycle as well as each single phase of their life cycle and through that compare the products.



Image 59: ecolizer designtool in Belgium (online)

### Ecodesign Tool for Packaging

57

- **Pack4ecodesign in Belgium:**



This tool can be used for making a life cycle analysis (LCA) for different kinds of packaging. The amount of water and energy used as well as the CO<sub>2</sub> emissions should be measured and thus the potential for their reduction made visible.

Image 60: Pack4ecodesign in Belgien (online)

## 5. Evaluation

The **Waste Prevention Guidelines of the European Commission** defines measures as well as indicators (so-called benchmarks) for the pursuit of success and other goals of each measure. Additionally, examples of waste prevention indicators for waste in households, for organic waste and for waste in construction are listed. (European Commission – General Environment, 2012) According to the **Austrian Federal Waste Management Plan**<sup>12</sup> (BAWP) the evaluation of existing as well as new measures is divided into two steps:

- In the first step, the expected impact of the different **measures should be defined**.
- To check whether the expected impact occurs, **indicators are set up** in the second step, in order to ensure the **measuring** of the actual impact.

On the one hand, core indicators are established in the BAWP, which should be defined in regular intervals (yearly). These are mainly the amounts of waste, divided into different categories. On the other hand, an extended indicator-approach should serve to determine specific values of the respective measure packages.

In the case of **re-use** they are

- The yearly income of re-use companies and
- The mass, amount or the income of yearly sold or used re-use products in form of an estimation on the basis of a gathering of data with a few flagship companies.

It should be possible to determine the degree of implementation of the planned measures with the help of these indicators.

In order to be able to estimate the potential of prevention of the above described sets of measures for the City of Graz, respective **data bases** have to be collected for each measure and indicators have to be defined.

**Measures** can, however, also be determined **in the first step**, according to the financial and administrative workload or their feasibility **in respect to their usage**. Thereby, the following criteria (modelled after the Viennese waste prevention plan) should be controlled:

- **Qualitative waste prevention** (reduction of the amount of environmentally harmful substances in the waste)
- **Quantitative waste prevention** (reduction of the amount of waste)
- **Costs of the measures**
- **Possibilities of realising the measures** (legal, technical-organisational feasibility of the measures) and
- **Contribution to sustainable development** (expected ecological, economical and social impacts)

The criteria named above, in any case provide a decision support for the City of Graz for the selection of measures that should be implemented.

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<sup>12</sup> Federal ministry of Agriculture, Forestry, Environment and Water Management, 2011. Federal waste management plan

**An example: Consideration of the Measure “Continuation of the Re-Use Box”**

The continuation of the Re-Use Box contributes to qualitative, as well as quantitative waste prevention, it has relatively low costs, can be easily realised and additionally with its public effectiveness, contributes to a sustainable development.

Furthermore, it will be necessary to **define** qualitative and quantitative **monitoring indicators** for each set of measures, which should make the monitoring and evaluation of the progress, made due to the measures, possible. Also, they should be representative and internationally comparable. Although it is easy to find indicators for some measures (for instance the share of ecological acquisition of the City of Graz in comparison to the total acquisition in %), it will be a lot more difficult for other measures (like the giving of an environmental award). In order to make statistical evaluations and exact analysis of the effectiveness of the measures possible, **respective data needs to be collected for the ongoing measures**, which will also be extremely difficult to realise in some cases (for example in online exchange platforms, awareness creating measures, etc.).

## 6. Political Recommendations

The “White Book for Waste Prevention and Recovery”<sup>13</sup> of the Federal Environmental Agency lists the following **actors**, which are decisive for an implementation of measures:

- **Legislator** (creation of efficient, legal frameworks)
- **Public administration** (control of compliance and of the execution of the waste management relevant legal norms, establishment and control of waste management plans)
- **Contracting authorities/public procurement**
- **Funding institution** (consideration of possibilities of waste prevention and recovery in the funding)
- **Producers** (extraction of raw materials, production, processing and marketing of products)
- **Trade, services, waste collectors and waste processors** (integration of sustainable production and sustainable consumerism, information hub)
- **Science and technology** (development of environmentally compliant procedures, products and service systems, as well as efficient planning processes)
- **Consumers** (through their lifestyle and consumer behaviour)
- **Citizens** (awareness of each individual)

The main responsibility of politics will be to develop corresponding strategies or rather implement measures in order to integrate all above mentioned actors in regard to waste prevention and to spread information for the purpose of sensitisation and motivation.

### **Sphere of Influence in Waste Management**

Waste management itself can contribute to waste prevention on three levels<sup>14</sup>:

1. Utilize waste or rather prepare it for re-use
2. Give feedback to upstream areas like politics and the society in general and
3. Initiatives that work where production and waste or consumerism and waste meet.

This has a decisive impact on strategies and decisions in politics as it functions as a supplier of measured values.

### **Sphere of Influence of the Public Sector – Contribution of the Civil Society**

As the above proposed measures show, the public sector can, on the one hand, act via incentives like financial aid, offers or public relations and educational work. On the other hand, it can also implement restrictions, tax mechanisms or conditions (for instance the configuration of waste fees, measures permitted by planning right etc.). Despite the fact that possible actions of the public sector are diverse, the implementation of measures is only possible in cooperation with people, firms or other groups, which are voluntarily active in this area. Voluntary measures from industry, trade and business, as well as committed individuals, often require incentives, offers and ideas from which they can draw and that provide an impetus.

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<sup>13</sup> Federal Environmental Agency 2007, White Book for waste prevention and recovery

<sup>14</sup> Federal Waste Management Plan BAWP 2011

Therefore, the focus should mainly lie on the sector of public relations (advisory-, educational-offers, events etc.) – measures which in this catalogue are listed in the chapter “rethink”.

## **Next Steps in the Implementation of the Waste Prevention Programme of the City of Graz**

### **1. Establishment of a Responsible Working Body**

- The body is responsible for the supervision and advancement of the waste prevention programme, as well as the planning, implementation and monitoring of the measures.
- First, the body’s job is to define and decide on **concrete, measurable goals** for waste prevention in Graz.
- Next, in the **implementation plan**, the body must concretise:
  - **HOW** the defined goals can be achieved (which measures should be implemented)
  - **WHEN** should they be reached (time horizon) and
  - **WHICH ACTORS** have to be included into the implementation (jurisdiction)
- Parallel to this, the gathering of an according data base, as well as the determination and description of monitoring indicators must begin, in order to make evaluation and analysis of the implementation progress possible.

The body should be comprised of the **following actors**:

- Environmental Agency of the City of Graz – Department for Waste Management Controlling
- Umbrella Organisation of the Styrian Waste Management Association, representatives of waste management associations and waste consultants
- Representatives of socioeconomic companies (BAN, Caritas, etc.), and NGOs (ARGE Abfallvermeidung)
- Representatives of the urban disposal company Holding Graz
- Social partners like the Chamber of Commerce or the Chamber of Labour
- If needed, representatives of the Ministry of the Environment and other federal states, as well as the association RepaNet as representative for the interest group of socioeconomic repair and re-use companies in Austria

Meetings should be held twice a year and are planned and organised by the Department for Waste Management Controlling.

### **2. Continuous Updating of the Catalogue of Measures every 2 Years**

The next update of the catalogue is to be done in the year 2017. Results from the regular working group meetings, as well as the networking meetings described below, are included in the revision of the catalogue.

### **3. Start of a Broad Participative Process via the Establishment of an Online Platform**

On this platform, private citizens and initiatives can share their projects and activities on the topic of waste prevention online.

Each year, one of the entries (“submissions”) receives a **prize from the city of Graz**. This provides an according incentive for people to submit their initiatives to the platform.

In this manner, information about current projects and initiatives is consolidated, while simultaneously contributing to public relations. In order to achieve adequate participation in the



process, an accompanying advertisement via different channels (for example BIG, GrazerUmweltZirkus, different Newsletters...) is indispensable.

#### **4. Organisation of a yearly Networking Meeting in other Cities**

By a regular exchange of cities amongst each other, synergies can be utilised. At the same time, parallel or rather double working on the same goals can be prevented. The city of Graz can act as an initiator for regular knowledge exchange on waste prevention programmes and strategies among the cities by organising yearly workshops and conferences. The network can, in any case, contribute to the acquisition of new impulses and experience value for the further development of the Waste Prevention Programme.

## 7. Summary

Prognosis of future trends in waste generation show that the waste generation will probably rise by 7 % from 2008 until 2020, without any additional measures for waste prevention.<sup>15</sup> Therefore, it is urgently necessary that EU Member States implement programmes for waste prevention.

These programmes should include the following:

- Goals of Waste Prevention,
- Measures

Qualitative and quantitative indicators are needed as a system for monitoring the progress of all measures, or rather combinations of measures.

Furthermore, **waste prevention programmes** should fulfil the **following functions**<sup>16</sup>:

- Enabling the target groups via information, providing according infrastructure and training,
- Motivating the target groups,
- Encouraging the target groups through positive and/or negative incentives,
- Integrating the target groups into the programme and
- Showing best-practice-examples through the public authorities.

The existing catalogue of measures is the first step to the implementation of these functions. It is decisive that the catalogue or the actions and initiatives of the City of Graz are communicated accordingly. The waste prevention programme should not stand for itself but play together with and complement other programmes of environmental protection (like programmes for the reduction of greenhouse gases, programmes for the lowering of emissions, energy efficiency programmes and resource usage plans). Successful environmental improvements can only be achieved if public authorities take a solid role in the implementation of measures as well as further actualisation and supervision of the waste prevention catalogue.

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<sup>15</sup> European Commission 2008

<sup>16</sup> Federal Environmental Agency 2007, White Paper for waste prevention and -recycling

## List of Abbreviations

ARRL – Waste Framework Directive  
 AWG – Waste Management Act  
 BAWP – Federal Waste Management Plan  
 BMLFUW – Federal Ministry for Agriculture and Forestry, the Environment and Water Resources  
 CNC - Computerized Numerical Control  
 LAWP – Waste Management Plan of the State  
 LREG – State Government  
 LCA – Life-Cycle Analysis  
 M – Measure  
 MA 22 – Viennese Environmental Protection Consultancy  
 ME – Recommended Measures  
 NABE – Austrian Plan of Action for Sustainable Public Acquisition  
 REACH – EU Chemicals Regulation (EC) No. 1907/2006  
 RUMBA – Guideline for Environmentally Friendly Completion of Construction  
 UBA – Federal Environmental Agency

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## List of images

Image 1: EU Waste Hierarchy (Reference: European Commission, 2015) .....	4
Image 2: 7Rs of the radial of Waste Prevention .....	5
Image 3: 1st step of the "waste prevention radial" .....	6
Image 4: Diapers check, Image@shootingankauf/Fotolia.com) .....	7
Image 5: Graz-Bag Image: City of Graz / Fischer .....	7
Image 6: ECOPROFIT Logo .....	7
Image 7: Logo G`scheit feiern / A14 Land Steiermark .....	7
Image 8: Image@designsoliman/ Fotolia.com .....	8
Image 9: Infocard City of Graz, Image@Alx/Fotolia.com .....	8
Image 10: 2nd Step of the "waste prevention radial" .....	11
Image 11: Repair Cafe 11.04.2014/City of Graz, Photo: Fischer .....	13
Image 12: Re-Use Box / Photo: Fischer .....	13
Image 13: Plüschtiere / Photo: City of Graz .....	13
Image 14: Repair Café/ Photo: Fischer .....	13
Image 15: Ökobörse / Photo: ©Kurhan/Fotolia.com .....	13
Image 16: 3rd step of the "waste prevention radial" .....	15
Image 17: ©Christian Schwier/Fotolia.com .....	16
Image 18: © BeTa-Artworks/Fotolia.com .....	16
Image 19: ©vege/Fotolia.com .....	17
Image 20: Logo ÖKOPROFIT/City of Graz – Environmental Office .....	17
Image 21: Photo by Kathrin Münzer & Gerhard Baumer, City of Graz .....	17
Image 22: No car day 2014 / Foto: Kathrin Münzer, City of Graz .....	17
Image 23: Grazer Umweltzirkus/Photo Fischer .....	17
Image 24: City of Graz - Service Hotline Graz/fotolia.com .....	18
Image 25: Infokarte Stadt Graz / Photo: Stanisa Martinovic/Fotolia.com .....	18
Image 26: Initiative „Gib mir den Rest 2014“/Foto: Holding Graz .....	18
Image 27: 4th step of the "waste prevention radial" .....	20
Image 28: 5th step of the "waste prevention radial" .....	22
Image 29: 6th step of the "waste prevention radial" .....	24
Image 30: EU Waste Hierarchy .....	25
Image 31: Clever purchase for school (online) .....	26
Image 32: The Stop Pub Sticker (pdf) .....	26
Image 33: Catalog Choice (online) .....	26
Image 34: Office Paper Cut Campaign – University of Alberta (online) .....	27
Image 35: Passing Food to Social Institutions (pdf) .....	28
Image 36: myfoodsharing.at (online) .....	28
Image 37: Give and Take Day (North London Waste Authority) (online) .....	30
Image 38: Alelyckan Reuse Park, Göteborg (pdf) .....	30
Image 39: Co-founder Hanna Nyberg in Lånegarderoben (online) .....	30
Image 40: Vienna online flea market .....	30
Image 41: Kleider Kreisel (online) .....	31
Image 42: Genbyg_online shop (online) .....	31
Image 43: Reparturnetzwerk in Wien (online) .....	31

Image 44: FabLab in München (online) .....	32
Image 45: Bikekitchen in Munich (online) .....	32
Image 46: Sew Good in Cheshire (online) .....	32
Image 47: TrashDesignManufaktur, Vienna (online) .....	33
Image 48: ReBlock – Every Sheet Deserves a Second Chance (online) .....	33
Image 49: wienzwoelf Taschen (online) .....	33
Image 50: TetraCase (left) und TetraBench (right) (online) .....	34
Image 51: Art oft the edge (online) .....	34
Image 52: Abluftkraftwerke made from pc fan (online) .....	34
Image 53: new fashion by used textiles .....	34
Image 54: Travelling exhibition „more or less waste“ (online) .....	35
Image 55: school project „Plate instead of waste“ (online) .....	35
Image 56: Multivision event REdUSE (pdf) .....	35
Image 57: Öko-RitterInnen und ClimateCoolers (online) .....	35
Image 58: BASTA – online Database for construction material (online) .....	37
Image 59: ecolizer designtool in Belgien (online) .....	37
Image 60: Pack4ecodesign in Belgien (online) .....	38

## List of videos

Video 1: wrapsacks .....	27
Video 2: drinking fountain (online) .....	27
Video 3: the wrapping bag (online) .....	27
Video 4: House of individual work .....	31
Video 5: What is Plastic? (online) .....	32 Video
6: Discosoep Amsterdam (online) .....	36 Video
7: Love Food Film Competition .....	36 Video
8: eeza. (online) .....	37