



# CONSUMER GOODS

### **JALILA ESSAÏDI CREATES NEW MATERIALS FROM MANURE**

Mestic® provides an answer to the manure surplus issue. Rather than a waste flow, artist-entrepreneur Jalila Essaïdi regards manure as a source of raw materials, e.g., for paper, but also for bio-plastics and textiles. Her splendid fashion show, featuring clothes made of both gossamer-thin and firmer Mestic fabrics convincingly demonstrated that such fabrics are odour-free.

Credit: Mestic, Jalila Essaïdi



THE TRANSITION  
TOWARDS A CIRCULAR  
CONSUMER GOODS ECONOMY



# PREFACE

The Consumer Goods Transition Team was set up on 24 January 2017 by the signatories to the Raw Materials Agreement. In 2017, this Transition Team eagerly embarked on the development of a consumer goods strategy that would lead to the realisation of the goals set down in the Raw Materials Agreement. They have opted to involve a great many stakeholders from the business community, governments, NGOs, trade sectors, and science in their development of a vision and a strategy. In ten different sessions, some two hundred people have provided input for a sound agenda. Rather than constituting a negotiated agreement signed by all the participants, this agenda reflects the outcome of a substantive discussion.

## THE MEMBERS OF THE TRANSITION TEAM

The Consumer Goods Transition Team is made up of the following members:

Anne-Marie Rakhorst	Chair - Duurzaamheid.nl	Marije Boekkooi	Duurzaamheid.nl
Vera Dalm	Vice-Chair - Milieu Centraal	Natascha Spanbroek	Municipality of Amsterdam
Ton ter Grote	Secretary - Rijkswaterstaat	Tanja Roeleveld	Landal GreenParks
Antoine Heideveld	Text author - Het Groene Brein	Sanne Westra	Ministry of I & WM
Mattheüs van de Pol	Government representative – Ministry of EA & CP	Carsten Wentink	Ministry of I & WM
Arnoud Passenier	Government representative – Ministry of I & WM	Jacqueline Rohde	Rijkswaterstaat
Dick Hoogendoorn	Dutch Waste Management Association		
Olaf Prinsen	NVRD		
Jeroen Hinfelaar	Nuovalente		
Jelmer Vierstra	Nature & Environment		

## SCOPE

Consumers occupy centre stage when it comes to consumer goods. Consumer goods are defined as the goods that are used by households, companies and civic society institutions for utility purposes. In other words: consumer goods involve all the products that are released after their lifecycle, either within households or by individuals from households at other locations. The Transition Team has focused on some product groups that provide a clear picture of what is understood by consumer goods, ranging from long-cycle to short-cycle products: furniture, household appliances, clothing & textiles, and disposables & packaging. These product groups have been used as typical examples of the various cycles. Detailed agendas for each product group have not been developed, but this could be accomplished at a later stage, together with the various parties involved. In the document at hand, the four product groups are mainly used by way of illustration.

## STATUS OF THIS VERSION

The document before you is the final version of the agenda. However, this agenda is not an end-product. The agenda will need to be supplemented and adjusted during the course of its implementation. It is a living document. We hope that the direction of this agenda will command broad support. Yet it could be the case that not all of the Transition Team members necessarily agree on all the items.

## ABSTRACTION AND LEVEL OF DETAIL

The intention of this agenda is to propose concrete lines of action based on a number of guiding principles: neither abstract measures, nor measures elaborated into precise details. It is an outline agenda which can be substantiated by the collective parties involved.

# CONSUMER GOODS CIRCULAR BY 2050

## ABSTRACT

The pursuit of the circular economy has inspired many to take concrete action. That is good, because working on closed loops yields economic benefits, improves the environment, reduces CO2 emissions, enhances the natural capital, and generates more job opportunities. The reasons for working on a circular economy are partly prompted from an economic perspective (for example, as an opportunity for international upscaling), partly from an environmental perspective, and partly with a view to reducing our dependency on the import of raw materials from unstable countries. Companies, NGOs, municipalities and civic initiatives show that a circular economy is feasible. By rethinking and thinking out of the box. By devising business models focused on reducing the consumption of raw materials, long-term use, and a high degree of reuse. It is time to let these examples evolve into the new standard, the new default. It is time that we are truly proud of our companies that link economic prosperity to environmental benefits and social added value. And that we are proud of the many innovations that have been and are being developed within the Dutch business and science communities.

The circular economy entails a departure from the idea that product life cycles constitute a linear process from production to waste. Instead, we need to regard this as a continuous, cyclical (closed) process, in which percentage defectives and the waste of material and human resources are kept to a minimum and in which employment opportunities and the economy are concurrently growing.

The Transition Agenda for Consumer Goods has been drawn up to realise the new standard referred to above. The agenda is structured on the basis of seven guiding principles. These principles have been translated into 38 concrete actions that together enable us to achieve a transition towards a circular economy. Individually, some of the measures only have a modest impact, but as a complete package, they make a circular future possible.

The 38 actions have been subdivided into three categories: overarching priorities, actions relating to short-cycle products such as packaging, and actions for medium-cycle and long-cycle products such as clothing and white goods.

The essence of the generic level measures is focused on the realisation of a price that includes external costs, such as social and environmental costs. The proposed measures will cut the prices of high-grade recycled raw materials and raise those of virgin materials.

The essence of the concrete measures for short-cycle products is to reduce the volume of such products. They are aimed at preventing the use of unnecessary materials. In addition, short-cycle products that are used nonetheless must be designed in a manner that allows them to be simply reused or recycled, i.e., on the basis of non-toxic and preferably bio-based raw materials. Finally, the collection of such materials must be effected univocally, in order to encourage the desired behaviour among residents everywhere, regardless of the city they live in and regardless of whether they are at home, at work, or on the road. See the green arrows in Figure 1.

The essence of the actions pertaining to medium-cycle and long-cycle products is the collective development of new business and revenue models. The point of departure in this respect is that the producer remains responsible for the products. The producer is free to aim for an optimum life cycle and high-grade repurposing of the products, components, and raw materials. This is beneficial both for the environment and the companies involved in various ways, e.g., by strengthening customer relations and lowering raw materials expenditure. For customers, this entails a higher product quality, less hassle, and spreading financial risks. This is illustrated by the blue arrow in Figure 1.

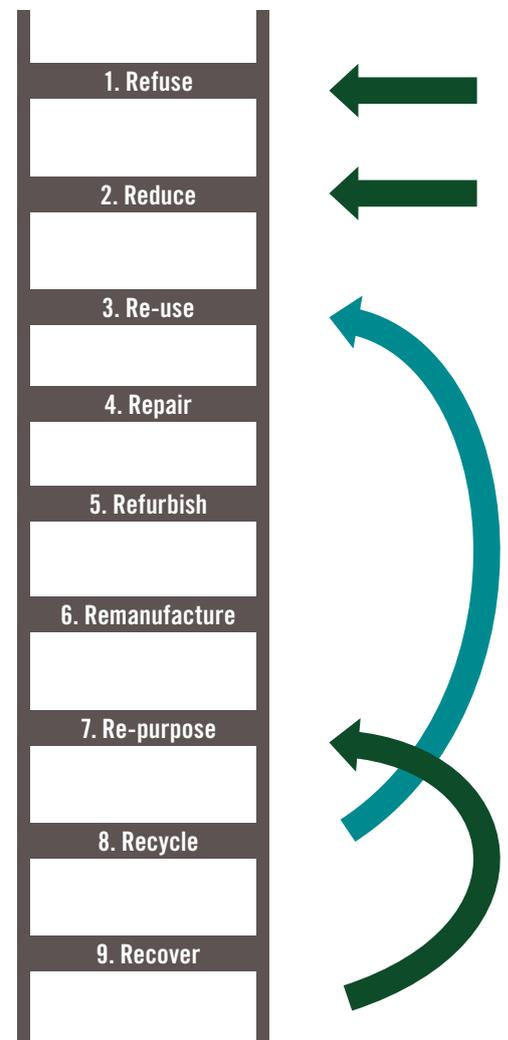


Figure 1. The R ladder of circularity. The green arrows indicate the steps relating to short-cycle products, the blue ones relate to long-cycle products.

Are all these actions already feasible? The implementation of a number of concrete actions from this agenda is dependent on further technical development, amendment of financial and accounting regulations, political decision-making or international coordination. However, several other actions can be implemented right away. They require support and perseverance, but they are not hampered by any major obstacles. That is positive news. Such implementation calls for proper control immediately upon the presentation of the agenda. Matters that can be implemented right away should not get bogged down in a vague division of tasks. Our proposal is for the Consumer Goods Transition Team (in this configuration or otherwise) to take up this control, in close consultation with the drafters of the Raw Materials Agreement.

It is a good thing that the circular economy concept and the Transition Agendas strategy are explicitly set down in the coalition agreement. It is now time to give impetus to their concrete substantiation. We sincerely hope that this Transition Agenda will contribute to expediting the realisation of the circular economy, with technical and social innovations that lead to environmental gains, social value, and a competitive edge.

*Limitations*

Tomorrow Brussels agreements  
may be different...



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## CHAPTER 1. INTRODUCTION

“Circularity has increased our market share from 15% to 25% with 8 times ROI within 4 years.” - DESSO Chairman

The circular economy is an attractive proposition, concurrently benefiting the economy, the environment, nature, and the population. Employment opportunities, clean air, biodiversity and economic development go hand in hand here. It is a perspective that is already being given concrete shape. Many examples, by Dutch companies, cities and the regions, show that it is feasible and that together we can create value. Below we will identify a few from different sectors and on different scales.

**The precursors. Circular examples from current practice.** The Bundles company sells washes rather than washing machines. The start-up buys the washing machines and subsequently sets them up in customers' homes. The customer takes out a subscription to a number of washes. If the washing machine breaks down, Bundles ensures that it is repaired or replaced. In addition, Bundles and Miele are adapting the washing machine's design in order to facilitate repairs. Furthermore, by connecting the washing machines and driers to the Internet, Bundles provides an additional service. For example, Bundles may provide users with advice on cleaner, more economical and cheaper ways of doing laundry by saving on energy, detergent, and water. For customers, this approach means that they get an energy-efficient and top-quality washing machine without the hurdle of a high purchase price.

**DSM** has been working on circular solutions for years, by switching to renewable materials and energy, and by designing products with a long life and high-grade recycling options. For example, DSM and Niaga have jointly designed a carpet with full recycling as the main criterion (design for recycling). Carpets featuring the Niaga® technology can be fully recycled into new carpets time and again. The Niaga® technology enables the production of mono material polyester carpet or a duo material version with reversible glue supporting all existing fibres. Niaga® carpet does not contain any materials such as PVC, bitumen, latex, and unknown fillers; ergo, it does not pose any health hazards.

With nearly 13,000 holiday homes spread across more than 75 parks, **Landal GreenParks** virtually qualifies as a small city. In collaboration with waste service provider Renewi, formerly Van Gansewinkel, the leisure chain is working on reducing the use of raw materials in their parks. Measures such as the acquisition of high-quality, long-life furniture that is easy to repair are pushing back the consumption of raw materials and enhancing the quality of holiday-makers' perceptions.

The Netherlands features a large number of cities and regions that are giving substance to the circular economy. For example, **Nijmegen** has been working on a climate-neutral and circular economy for several years, an effort for which it has been rewarded by being acclaimed as European Green Capital of 2018: the sustainable capital of Europe. One of Nijmegen's commendable efforts is that the city is devising and applying a range of measures to circularise its Four Day Marches festivals, from preventing waste to upcycling urine. By offering the Four Day Marches event as a testing ground, new solutions quickly get off the ground and gain acceptance among the public at large.

On 5 September 2017, **ABN AMRO** opened its Circl circular pavilion to the public. This enables students and other visitors to experience hands-on what the circular economy entails. Disassembling your own mobile phone, making new products out of waste: concrete, tangible, and for everyone.

These are just five of many cases in point. From a circular orchid grower to Philips and from SGS-Search to Interface. From Auping to Gispem. From IBM to the Port of Rotterdam. And of course, the many thousands of civic initiatives in the Netherlands, such as Wasted. Even then we are still selling short many others. The examples are there. An overview is available on [bestpractices.circulairondernemen.nl](http://bestpractices.circulairondernemen.nl).

A good thing about these examples is that they demonstrate how reducing the environmental burden and financial gains can really go hand in hand, by adopting different lines of thought and by organising things differently. The examples make the switch from less bad to really good: with more employment opportunities, a lower burden on the environment, and solid finances. With all these examples, the Cradle to Cradle concept, as substantiated by William McDonough in his designs, is being put into practice in a wide range of sectors. The examples also demonstrate another shift, viz. an innovation in the ways in which parties join forces. Collaborations are established across the traditional chains, across sectors. For example, between a waste processor and a carpet manufacturer. Furthermore, interests appear to be shifting. The companies in these examples have taken a social issue as their goal. Making a profit is no longer the sole point of focus: the purpose is given a more central position. In other cases, social enterprises are evolving that go about the achievement of a social objective in a business-like manner. The distinction between companies and NGOs is thus narrowing.

Furthermore, for example, the interests of trade unions and employers' organisations are shifting. Such changes are still at a very early stage and need to be followed up.

Consequently, it is time to take the next step: from fine examples to mainstream. The many initiatives in the Netherlands, particularly those set up by companies and regions, have resulted in a broad-based coalition: see the Raw Materials Agreement. This Agreement also fleshes out the Dutch government's aim to achieve, as a society, a fully circular economy by 2050.

**Consumer Goods Transition Agenda.** This agenda pertaining to consumer goods is aimed at developing concrete proposals for expediting the transition towards a circular economy. The Transition Team has been exploring mechanisms and concrete activities that can boost the actual acceleration of the transition. The team does not make any claim to be exhaustive in this respect, as we are not aware of everything and the lion's share of the on-going efforts consists of work in progress. The agenda outlines the future that we envisage. Its principles and objectives are complete and tenable. Ideally, the agenda will be continuously supplemented with new insights.

This Transition Agenda ensues from agreements made within the framework of the Raw Materials Agreement set down on 24 January 2017, which by now has been signed by more than 340 parties. In addition to this agenda, Transition Agendas have been developed pertaining to other issues that share common ground with this agenda in various respects: Plastics, Construction, the Manufacturing Industry, and Biomass & Food. The Transition Agenda has been established on the basis of many multi-stakeholder dialogues between and with the business community, NGOs, scientists, the education world, civic platforms, and governments.

### STRUCTURE OF THIS TRANSITION AGENDA

This Transition Agenda addresses many aspects of the circular economy and outlines several intervention strategies. Chapter 2 describes and explains the objectives and general circular economy principles that apply to consumer goods. Chapter 3 describes a large number of concrete actions and interventions, based on the objectives and principles. This chapter is subdivided into overarching priorities, short-cycle products, medium-cycle products, and long-cycle products. Tables at the end of the chapter present all the actions along with options for their implementation. Chapter 4 elaborates a number of iconic projects and sector plans for three sectors (furniture, electrical appliances, and textiles). These chapters constitute the core of this Transition Agenda.

Chapter 5 outlines the impact of the Transition Agenda in three transition tracks:

- Knowledge Agenda. What knowledge issues arise from this Transition Agenda?
- Social Agenda. How do we use the Agenda to ensure a healthy labour market with sufficient prospects? And in the transition to a circular economy, how do we safeguard the human side, including the competencies required to work on circularising the economy?
- Investment Agenda. Carrying out the concrete actions costs money. It is still not quite clear how much money will be involved. In the Investment Agenda, this is further elaborated in several scenarios.

Chapter 6, finally, indicates the governance and control to be exercised in the follow-up to this agenda. This is to ensure that the agenda will not remain a paper document but rather evolve into a living agenda with a focus on the implementation of concrete actions.

We hope that this agenda will inspire parties to do their part in the implementation, further substantiation, and continuous improvement and adjustment of this agenda.



*Credit: Four-Day Marches festivals, Nijmegen*

### **NIJMEGEN ACCLAIMED AS 2018 SUSTAINABLE CAPITAL OF EUROPE**

The Netherlands features a range of cities and regions that are giving substance to the circular economy. For example, **Nijmegen** has been working on a climate-neutral and circular economy for several years, an effort for which it has been rewarded by being acclaimed as European Green Capital of 2018: the sustainable capital of Europe. One of Nijmegen's commendable efforts is that the city is devising and applying a range of measures to circularise its Four Day Marches festivals, from preventing waste to upcycling urine. By offering the Four Day Marches event as a testing ground, new solutions quickly get off the ground and gain acceptance among the public at large.

## CHAPTER 2. DEFINITION, GOAL, AND GUIDING PRINCIPLES

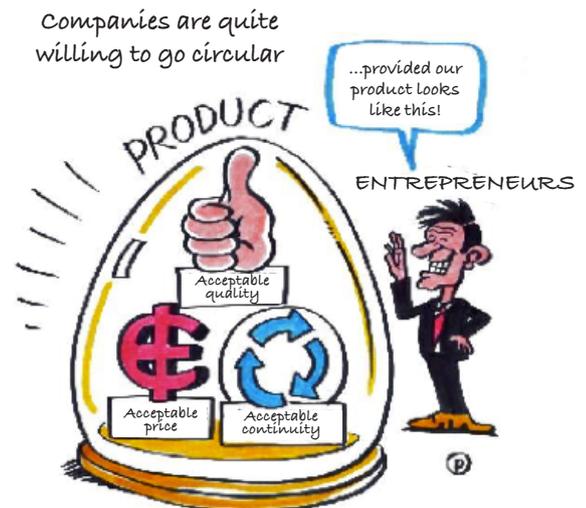
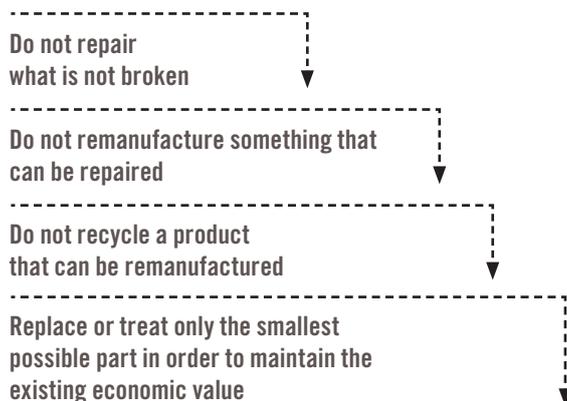
'The thieves stealing copper, lead, and zinc from demolition buildings have a good grasp of the circular economy.' - Anne-Marie Rakhorst

The key goal of the Raw Materials Agreement is for the Dutch economy to go circular by 2050. A circular economy entails a departure from the idea that a product life cycle constitutes a linear process, from production to waste. We are going to regard the economy as a continuous, cyclic, closed process, involving minimal wastage of products, materials, and people. At the same time, it must feature growing job opportunities and a growing economy. In short, a circular economy is an economy so structured that it also allows future generations access to material prosperity and well-being, within the boundaries set by our planet.

This Transition Agenda is based on a definition that Walter Stahel – one of the founding fathers of the circular economy – already introduced in 1982: "The economic objective of the circular economy is to create the highest possible usage value for the longest possible time, while consuming as few material resources and energy as possible."

### THE INERTIA PRINCIPLE

BY WALTER STAHEL



## 2.1 THE INTERNATIONAL CIRCULAR COMPONENT: THE NETHERLANDS IS NOT ALONE

The transition towards a circular economy is taking place in an international context. It offers both opportunities (regulations, business opportunities) and potential problems, such as the import of non-recyclable materials. Five components can be distinguished in international collaborations:

- **Business opportunities.** It is apparent that the circular economy is also addressed at the international level. Companies that successfully experiment with circular products and services may gain an international competitive edge. For example, the members of the Dutch Environmental and Water Technology Association (ENVAQUA) already attract 90 per cent of their turnover from abroad. The Transition Team also sees opportunities for achieving economic growth by committing to the circular economy. In this respect, it is essential for companies to capitalise on such opportunities and enter into close collaboration. To this end, the Transition Team suggests that the “Holland Circular Hotspot” initiative be reinforced and used as a vehicle to boost the opportunities of the Dutch business community.
- **Impact.** Working on the circular economy strengthens the implementation of the Sustainable Development Goals (SDGs) and reduces CO2 emissions. It is important to also consider the export of circular products within the context of development cooperation and to value its positive impact on the achievement of the SDGs.
- **Regulations.** Expediting the transition towards a circular economy calls, first of all, for an ambitious EU policy. After all, a substantial number of actions required to circularise the economy can only be implemented at the EU level or in collaboration with other countries. Examples are: resolving bottlenecks in existing EU legislation and regulations, and a wider use of market incentives to give impetus to the circular economy market. For this reason, the Transition Team advocates an energetic implementation of the European “Circular Economy Package” and the establishment of smart coalitions with other progressive member states. A table at the end of Chapter 3 of this Transition Agenda lists the actions to be carried out at the European level.
- **International chains.** Many products are manufactured through international chains, in which raw materials are derived from a host of countries and in which trade spans various parties in several countries. Effective action requires international collaboration across the entire chain, at the EU or global level. For that reason, it is important to further flesh out the ideas and actions ensuing from the “North Sea Resources Roundabout”. In this respect, the circular economy can also serve as a driver for the implementation of International Corporate Social Responsibility covenants, as such covenants partially revolve around transparency in the chain, something which is key in circular business models.
- **Internationalisation of consumer behaviour.** Consumers increasingly buy online. By now, consumers are buying increasingly more outside the EU via web shops: the so-called direct import. Some of these web shops also sell products that do not meet the high quality and safety requirements that are in force within the EU. This has a negative impact on the level playing field for the entire retail trade, both online and offline. This calls for collective action from the EU.
- **Expansion of knowledge.** The Netherlands is regarded as an international pioneer when it comes to the circular economy. However, the Netherlands can still learn a great deal from other countries, both within and outside the EU.

## 2.2 OBJECTIVE, PROBLEM ANALYSIS, AND PRINCIPLES

### 2.2.1 OBJECTIVE

The key objective of the Raw Materials Agreement is to achieve a circular economy by 2050. To concretise this goal, the Transition Team has set down several sub-goals. These sub-goals revolve around the ladder of circularity (also known as the R ladder, see Figure 2). To retain the highest possible value, any product, component, or raw material must always be used on the highest possible rung of the ladder.

#### SUB-GOAL 1: VALUE CREATION

The transition to a circular economy produces value creation at the social, ecological, and financial levels, both in the Netherlands and in other countries, through expanding the export of circular products and services. This can be made quantifiable by using the broad-based prosperity indicator (Bas van Bavel, Utrecht University) or Kate Raworth's so-called Donut Model .

#### SUB-GOAL 2: FEWER RAW MATERIALS

Rethink, refuse, and reduce represent the first three rungs of the R ladder. This means that we need to give serious thought to what exactly we are manufacturing or purchasing. By 2030, we must have reduced the production and consumption of wasteful products. This especially applies to short-cycle products such as packaging and disposable materials. The goal in this respect is to achieve a 100% reduction in the volume of non-essential short-cycle products by 2030. In addition, by 2030 all new product-service combinations that are launched must be based on circular design principles – at the national, European, but also the global level.

#### SUB-GOAL 3: OPTIMUM USEFUL LIFE

We can make the most of the products and raw materials that we do use by using them as long as, and at as high a grade, as possible. By 2030, we will be using 100% of the products and raw materials at the highest possible rung of the R ladder. Reuse and repair are preferable, as is reuse of components, whether in new applications or not. The next preferable option is recycling of raw materials. This means that by 2030, in principle, (raw) materials will no longer be incinerated with energy recovery, because actions higher up on the R ladder are viable. This must be concretised for each separate product group. This will also impact the recycling industry. For example, the stock of products that are still in circulation must be recycled as optimally as possible. For products that are not yet recyclable in a high-grade manner, processes and technologies must be developed to keep large volumes away from tips and incineration plants. Manufacturers of new products must demonstrate that such products are recyclable. Non-recyclable products must, in principle, be barred from the market. Loops will thus remain closed, unless manufacturers can explain why such is not feasible.

#### SUB-GOAL 4: OPTIMUM UTILISATION AND FUNCTIONALITY

Finally, we will make the most of products and raw materials by intensifying our use of their functionality. In theory, a chair can be sat on for 24 hours a day. In practice, it is used for no more than a few hours. A passenger car remains stationary for an average of 22 hours a day. Tools, (children's) clothing, bread machines, means of transportation, and an array of other things are only used in a sub-optimum fashion as well. Rental, sharing, exchange, and loan platforms can change this. By 2030, products must be utilised in an optimum manner, with companies and consumers opting for appropriate business models.

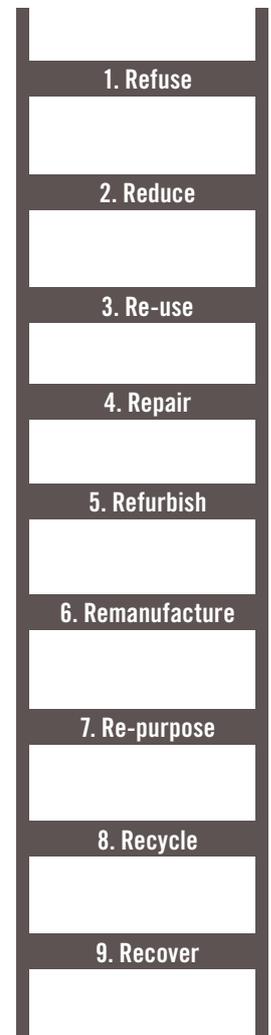


Figure 2. The R ladder of circularity

<sup>1</sup>See *Tegenlicht* broadcast of Sunday 26 November 2017.

<sup>2</sup>Cf. Bakker, Conny et al. (2015), *Products that last. Productontwerpen voor circulaire business models. [Product designs for circular business models]*

### 2.2.2 BRIEF PROBLEM ANALYSIS

The examples in Chapter 1 show that the circular economy is viable and can yield social, ecological, and financial gains. Then why do we need a Transition Agenda? What are the obstacles that block the circular economy?

In 2015, Acceleratio and Nederland Circulair! conducted a comprehensive study into this question, commissioned by the then Ministry of Infrastructure and the Environment. With respect to the Consumer Goods Transition Agenda, two key issues have emerged: on the one hand, the lack of market incentives and on the other, market incentives counteracting the circular economy – because these still exist as well. In other words: there are many incentives that keep companies, consumers, and governments from going circular. Below we will name a few.

The Acceleratio and Nederland circulair! study can be found here:

<https://www.circulairondernemen.nl/uploads/e00e8643951aef8adde612123e824493.pdf>

#### MARKET INCENTIVES INVOLVING THE PRICE OF RAW MATERIALS

Many virgin raw materials are currently cheaper than secondary raw materials. Many external costs, such as pollution, have not been internalised into the price. This is one of the outcomes of a study set up by BRBS Recycling and conducted by CE Delft in 2013. With respect to the waste flows investigated, the conclusion of this study was that the social benefits of increased recycling exceed the costs. The main reason is that in monetary terms, environmental gains exceed the social costs. The fact that environmental pollution is currently viewed as a source of external expense that is not taken into account with regard to the product reflects unfair competition between virgin and secondary materials.

#### MARKET INCENTIVES IN COMPANIES' REVENUE MODELS

For many companies, selling products constitutes the essence of their revenue models. Ownership of the product and consequently of the raw materials is thus transferred to the buyer. Two market incentives are hampering the circular economy here:

1. In this model, it is difficult for a company to target optimum useful life, as it is up to the consumer to determine how long a product will be used. Manufacturers are interested in selling as many products as possible, which can also counteract an optimum useful life.
2. The product is not returned to the manufacturer, which prevents the manufacturer from finding out whether its design will keep it high up on the R ladder after use. Ergo, there is no incentive for circular designs.

The solution strategy is to develop other revenue models in which the market incentives correspond to the values of the circular economy. Such models already exist.

#### MARKET INCENTIVES IN FINANCING

If companies were to develop a revenue model whose incentives prompt choices for the circular economy, in actual practice this would entail a different form of entrepreneurship which would call for a different form of financing. In many cases, the risk return profiles of financiers are currently based on premises from the linear economy, which means that, for example, incorporating the value of raw materials at the end of the usage phase is not common practice. Together with pioneering companies, financial institutions are now working on the development of financial constructs relating to the new revenue models. This takes time.

#### MARKET INCENTIVES IN LEGISLATION AND REGULATIONS

The government has already incorporated the circular economy into its goals and policies. Yet some legislation and regulations hampering the circular economy are still in place. For example, the waste regulations that stipulate that once discarded, materials are waste and must be treated as such. In some cases, this legislation is highly relevant – such as, e.g., illicit dumping of waste and reducing the spread of toxic substances – but in other cases, it may impede the development of a circular economy. Companies using waste as a raw material currently need to revert to a range of exemptions, whereas it should in fact be the other way around.

Another example is the anti-trust legislation, as acknowledged in, e.g., the coalition agreement. Companies are not allowed to make mutual agreements regarding, for example, prices. In the circular economy, by contrast, a different form of collaboration arises within the chain, in which certain agreements are helpful. In this respect too, companies engaging in such collaboration need to apply for exemptions and run certain risks, even though they are actually creating social value. For that reason, the Transition Team takes a positive stance regarding the Cabinet's intention to study whether and how the competition legislation can be amended, if it hampers proper collaboration between companies and within chains, with a view to sustainability.

**LACK OF MARKET INCENTIVES**

In many cases, the lack of market incentives constitutes the very cause of the problem. For example, hardly any incentives exist for separating waste or refusing disposable products. Good behaviour goes unrewarded. Reversing the standard situation may already help. This is literally what the municipal “reversed waste collection” is based on. Valuable fractions are collected door to door, residual waste must be taken to a waste collection centre.

**ALL IN ALL: MARKET INCENTIVES HAVE AN ADVERSE IMPACT ON OR INSUFFICIENTLY FOSTER THE CIRCULAR ECONOMY**

All in all, the effect of these market incentives is that parties operating in a circular fashion are required to stick their necks out quite a bit. Even worse, many incentives counteract the envisaged movement towards the circular economy. Some companies indicate that they sometimes feel punished for going circular. This can only change if new defaults are created on several fronts. Circular will be the new default. Below, we will describe a few principles that lead to this new standard.

**2.2.3 PRINCIPLES**

To achieve the goal and remove the obstacles, the Transition Team has set down a few principles to be met by the intended circular final situation. Situations are variable and concrete interventions will continually need to be adapted to existing contexts, but these principles remain valid. This means they can provide long-term guidance, even though we find ourselves in a highly fickle environment. The principles are discussed below. Each section concludes with a brief description of the new default ensuing from the guiding principle.

**PRINCIPLE 1: MAXIMUM VALUE CREATION: ECONOMIC, SOCIAL, AND ECOLOGICAL**

The circular economy revolves around value creation and value retention. Taking this as our point of departure will create and retain economic, social, and ecological values. This means that circular products and services must be and remain competitive and add social and ecological value. External costs may not be shifted on to society. At the same time, we must have an eye for external gains, such as the value of more greenery, a healthy ocean, or social inclusion of individuals who now fall by the wayside in society. Ergo, this principle also targets the achievement of goals such as the climate agreement and the SDGs.

The pursuit of sustainable consumption and production of consumer goods (SDG 12) must go hand in hand with the stringent preconditions set by the SDGs. For example, the processes must not cause ecological harm (SDGs 6, 14, and 15), and they must contribute to combating climate change (SDGs 7 and 13). In addition, they must feature ethical labour conditions (SDGs 1, 10, 11, and 16). A circular economy, finally, fosters economic growth and employment opportunities, both in the Netherlands and elsewhere in the world (SDG 8).



Figure 3. The Sustainable Development Goals

<sup>3</sup>To follow up the Millennium Goals, the United Nations formulated seventeen Sustainable Development Goals (SDGs), that came into effect on 1 January 2016 and cover the period up to 2030. The goals are intended to end, inter alia, poverty, inequality, and climate change. Figure 3 contains an overview of the SDGs.

The new default will be: activities initiated by organisations in the field of sustainable consumption, production, and reuse must create value in the social, ecological, and economic fields. Any lack of such positive impact must be underpinned by a good reason.

**PRINCIPLE 2: QUALITY AND QUANTITY GO HAND IN HAND**

The use of non-virgin raw materials is essential in the circular economy. In this Transition Agenda, they are referred to as “secondary raw materials”. Upscaling of the circular economy renders the right quality of secondary raw materials essential to the manufacturer. A manufacturer can only use used materials if there is a continuous supply of secondary raw materials of sufficient quality. Currently, neither the quality nor the continuity of supply is adequate. A substantial growth in the market demand for secondary products and materials is dependent on an improvement of the quality of secondary raw materials, without – with a view to the continuity of supply – compromising the quantity. This conclusion has ramifications for the design, collection, and recycling of products. And for the products themselves, if the properties and quality of the secondary raw materials are manifest.

With respect to certain secondary raw materials, the price-quality ratio of the supply is inadequate on account of the mandatory nature of the collection of such waste matter (NedVang, From Waste to Resources programme). Other waste matter is used to produce secondary waste matter for which there is a demand, but a limiting factor here is the option of low-grade incineration or dumping at too low a rate. If the market for secondary products and materials is to grow substantially, the price-quality ratio of secondary raw materials must be such as to be able to compete with primary raw materials. This conclusion has ramifications for the design, collection, and recycling of products, and the rates of low-grade processing of waste matter.

First of all, products need to be designed in a manner that enables repair, disassembly, and high-grade recycling. This enables the optimum recovery of components and raw materials for reuse, resulting in high-quality secondary raw materials. This has ramifications for the choice of materials to be used and the product design, both of which now serve the purpose of optimising the possibilities for reuse and recycling. The chosen materials must not be toxic and preferably bio-based. In the future, this will improve the quality and quantity of available components and raw materials. Circular design of products must be embedded in the very capillaries of the economy.

A second important issue involves collection and recycling. In recent years, the authorities have opted for maximum collection in order to prevent incineration of recyclable waste. For that reason, the volume – i.e., the quantity – is the current point of focus in the collection of packaging waste. A drawback is that materials are lumped together which precludes their high-grade utilisation, for example, a combination of full yoghurt cartons and plastic packaging. On the up side, the focus on quantity has created sufficient volume to move on to quality without increasing the quantities that are incinerated. This can be achieved by improving collection methods and applying circular design principles. The primary point of focus in the collection criteria must then be the ultimate use of secondary raw materials, thereby ensuring the availability of sufficient raw materials to safeguard the continuity of their supply.

A third important issue is the right choice of (raw) materials used in designs. The concept of application value provides a good indication to this end. Current product specifications almost exclusively ensue from the application and use of the product. Choices of material are based on these specifications. Such choices are substantiated by opting for raw materials that meet the product specifications. Additionally, factoring in the application value would prevent, for



Sustainable yarns for DESSO carpets by Tarkett. Tarkett supplies high-quality DESSO carpets and manufactures the products in accordance with the Cradle-to-Cradle principles.

Credit: Tarkett / Desso

example, the use of an unnecessarily high quality if a lesser quality would suffice. Subsequently, the chosen raw material will have the right application value. In this context, it is also important to refrain from using raw materials that negatively impact the recycling process after use, and to make the most of recycled materials and reusable components.

Fourthly, the incineration and dumping of (mixed) waste matter must be further deterred, to prevent sorting and recycling plants from having to compete on prices both up front (low-grade processing such as dumping and incineration) and at the rear (primary raw materials).

In some areas, safeguarding the quality and quantity of available recycled raw materials in the future requires – in addition to a considerable investment in design methods – significant investments in research and the development of recycling technologies. For example, this is important with respect to textiles, for which recyclates with sufficient application value are as yet unavailable.

This principle, finally, pursues the use of non-toxic raw materials from sustainable sources.

The new default will be: the design of products must be explicitly based on circular design principles. Material choices must factor in the application value of components or raw materials, with a focus on non-toxic raw materials from sustainable sources. Waste must be collected by methods yielding high-quality secondary raw materials, in combination with sufficient quantity.

### PRINCIPLE 3: CHOOSE THE OPTIMUM SCALE LEVEL

Choosing the proper scale level in the high-grade (re)use of materials is not an easy matter. Activities are context-dependent: what works in Amsterdam is not by definition the best choice for Apeldoorn. A region's nature and specific context, its bottlenecks and opportunities must always be taken into consideration. A good point of departure is working with what is available locally; as for scale, the aim must be "as small as possible and as large as needed". This has the advantages of limiting transport requirements, cost efficiency, recycling governance, and transparency. It requires:

- Cherishing small loops that already exist, such as local initiatives involving the manufacture of new products from collected plastics, to be used in the area;
- Setting up regional loops based on the high-grade use of secondary raw materials;
- Closing national loops between urban and rural areas wherever possible;
- Considering the impact of international flows on social, ecological, and financial aspects, and tying in with any international corporate social responsibility covenants already in place.

Environmental and social effects must always be taken into account here (principle 1), because thinking and working at a local scale is not by definition better in all those fields. As a result of economies of scale, in some cases transporting products outweighs local production in terms of human health and the environment. Furthermore, economic, social, and ecological effects may counteract one another. Something that is preferable on a social level is not by definition better for the environment. There is not always a "right" choice! Considerations must always be made.

For that reason, it is important for choices to be transparent. Make clear why certain choices have been made, so that they can be adapted to changing contexts or insights. The entire chain must be considered here. Only by factoring in what happens before and behind them in the chain can producers make a well-considered decision. This is why collaboration in short, well-organised chains is imperative. Such chains do not always need to be physically short.

In terms of scale, the new default will be: as small as possible and as large as needed. The scale level will be considered, factoring in the entire chain. This consideration will be accounted for transparently and clearly, for example, on the basis of a life cycle analysis (LCA).

### PRINCIPLE 4: INNOVATION FIRST. TAKE RISKS AND INVEST! <sup>4</sup>

The transition to a circular system requires a great deal of adjustment and innovation. We are facing major challenges. These challenges cannot be met by the government or the business community alone. This is why ample room must be created for bottom-up initiatives, start-ups, and innovative experiments by existing companies. It is those experiments that can generate innovative answers to existing problems. We must not be afraid to make mistakes in this respect. Some initiatives will be successful, others will not. Some will only provide a regional or specific solution, other might offer leads for resolving an issue in another context. In the opinion of the Transition Team, we must be wary of avoiding too much risk. After all, being able to make a full assessment of the risks involved means that the innovation will not be disruptive.

<sup>4</sup>A fine example of this principle can be found on [www.fastcompany.com/40486883/these-diy-machines-let-anyone-recycle-plastic-into-new-products](http://www.fastcompany.com/40486883/these-diy-machines-let-anyone-recycle-plastic-into-new-products).

The new default will be: invest and create room for innovation and bottom-up initiatives that can foster the transition to a circular economy. Accept the risks involved.

**PRINCIPLE 5: EXTERNAL COSTS MUST BE INTERNALISED INTO THE PRICE**

Parties marketing products that do not fit in with the circular, sustainable economy must make a financial contribution to resolving the issues involved. In other words: parties causing pollution must foot the bill. This will result in a product price in which the externals are fully incorporated. This will lead to a more level playing field.

The new default will be: we pay the full price for products, including external costs.

**PRINCIPLE 6: OWNERSHIP OF A PRODUCT IS VESTED AT THE LEVEL AT WHICH VALUE CAN BE ADDED OR RETAINED MOST EFFECTIVELY**

In the current system, many companies are selling their products to end up subsequently with the users. This means that it pays off to market large volumes, even though there is no consumer demand; cf. Chapter 2.2.2 (analysis). This principle can be broken down in various ways, depending on the revenue model to be chosen. A component may be, for example, an Extended Producer Responsibility, EPR. Parties marketing products will thus be responsible for ensuring that the products are carefully reused or processed.

The new default will be: manufacturers (and importers) remain responsible for their products and must ensure their high-grade reuse. This can be achieved in either a “closed loop, closed source scenario” or through an “open loop and open source approach”.

**PRINCIPLE 7: ACT ON THE BASIS OF SOCIAL AND PSYCHOLOGICAL INSIGHTS**

Sustainable behaviour is essential to achieve a circular economy. We can only circularise the economy if residents’ behaviour is aimed at making the most economic use possible of products and materials, and at keeping products and materials in the chain for as long as possible. Manufacturers and retailers may entice consumers to present their product for reuse, repair or renovation rather than discarding it as waste.

This calls for two things. Firstly, the standard situation is still based on non-circular behaviour. Reversing the standard situation or the standard supply helps facilitate circular behaviour. Secondly, consumers/residents can adopt an active stance. Consumers can actively adopt a searching, purchasing, using, and discarding behaviour that enables companies to switch to circular business models at an earlier stage. Consumers can provide valuable information through their behaviour. A consumer could even become a co-designer of a circular business model or a supplier of renewable materials or disassembled components. We call this: from consumer to “prosumer”.

The new default will be: the easiest option for consumers must be the circular option. Consumers must assume an active role in the circular economy, for example, in combating wastage. In both cases, independent consumer information must be available enabling people to make the right choices.<sup>5</sup>

**2.2.4 IMPACT**

The seven principles serve as a touchstone for the 38 actions and interventions proposed under the action agenda. This is the framework in which the Transition Agenda has been drawn up.

<sup>5</sup> See definition by Dr Conny Bakker, Delft University of Technology.



*Credit: Kiekuniek*

#### **REUSE OF CLOTHING IN A THRIFT STORE**

We can only circularise the economy if residents' behaviour is aimed at making the most economic use possible of products and materials, and at keeping products and materials in the chain for as long as possible.

## CHAPTER 3. ACTION AND INTERVENTION AGENDA

“When you go to a more detailed level of CE it becomes a lot more complex. It requires a lot of training and education to make people truly understand what such propositions mean. One of the key challenges is that it requires a wide range of skills and capabilities.” - Jad Oseyran, IBM

The circular economy can only be established if we are able to translate our ideals for the future of the circular economy into concrete actions. These actions must generate concrete results that inspire and pave the way for subsequent steps in the (expediting of the) transition to the circular economy. This chapter outlines the concrete actions that have been submitted by a wide range of stakeholders. Actions that, according to the Transition Team, substantiate the objectives and principles set down in Chapter 2, and actions that collectively step up the establishment of the circular economy. In both cases, a distinction is made between concrete lines of action for short-cycle products and those for medium-cycle and long-cycle products.

- Short life cycle. These are products that do not last long and are quickly replaced, such as disposables and packaging. Most of these products are used only once or a limited number of times.
- Medium and long life cycles. These are products such as clothing and textiles (medium life cycle), and household appliances and furniture (long life cycle). These products are used multiple times and in many cases of such quality that reuse, repair, and refurbishment are, theoretically, feasible and promising from a commercial point of view

Within this dichotomy, a distinction is subsequently drawn between the three stages of the product cycle: design and production stage, retail and usage stage, and the stage in which products are reused. This trichotomy in stages is based on the “Value Hill model” (see Figure 4). In addition to the actions specific to short or long cycle products, actions of a more generic nature are also needed. These overarching priorities are addressed in paragraph 3.1. The chapter concludes with a matrix of concrete actions, plotted according to the options for implementation.

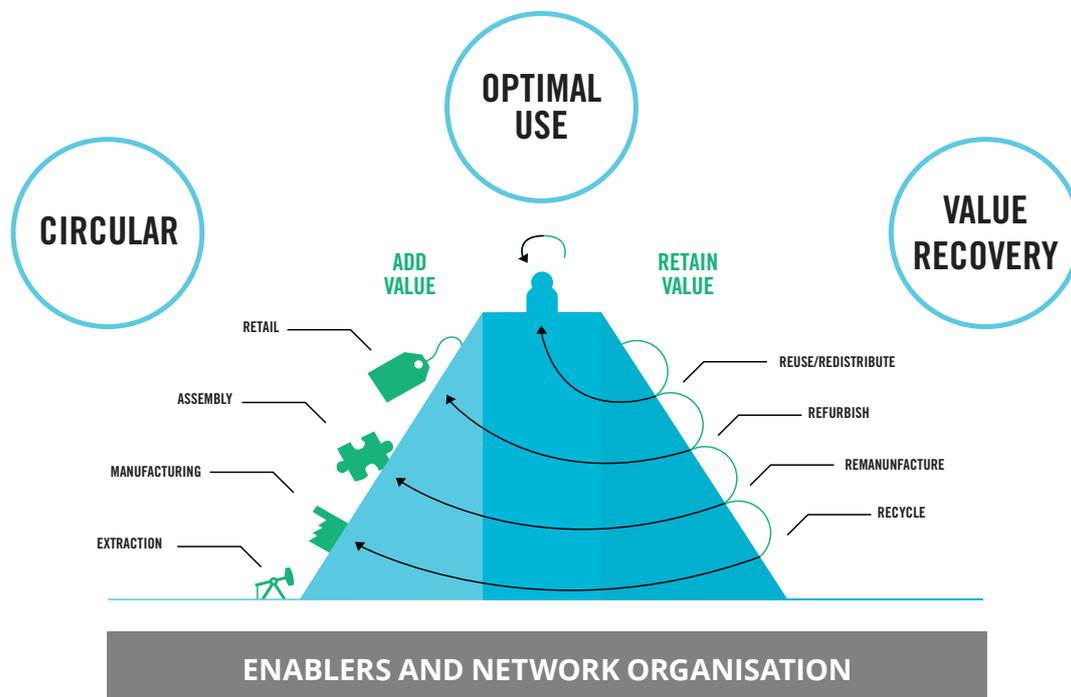


Figure 4. The Value Hill

### 3.1. OVERARCHING PRIORITIES

“If the environmental impact or resource use is reflected in the price, you will naturally see sustainable products and services grow in demand.” - Andy Ridley, Circle Economy

Several actions pertain to the various turnover ratios and the various stages in the life cycle; they may also be of interest to other Transition Teams.

In other words, these actions are essential to make the circular transition as a whole a success. This is why the Transition Team first explicitly focuses on these overarching priorities.

#### 3.1.1 PRICE OF RAW MATERIALS

In part as a result of the low oil prices, new oil-based raw materials are cheaper than recycled alternatives. However, these prices do not reflect external costs, such as those relating to CO2 emissions. This price difference does not deter front runners, but it does hold back the pack. Fair pricing is essential for an actual switch to a circular economy.

For that reason, external costs must be internalised into the pricing mechanism. A first step in this direction could be to put a substantial price tag on CO2 emissions, considering that this factor not only plays a key role in the climate debate, but also in the realisation of a circular economy. This CO2 price must be fixed at the European level as a minimum, but preferably on a broader international scale. In the short term, however, Dutch organisations can start working with a so-called shadow price: a fictitious price of, e.g., EUR 100 per tonne of CO2 to be used in quotations and tender procedures. The price of EUR 100 per tonne of CO2 is based on research into the price required to attain the two-degree goal set down in the Paris climate agreement. Ultimately, the sum is not paid if this shadow price is used, but it does mean that CO2 low proposals will surface in tender procedures.

The government has several options in terms of tax advantages or disadvantages for certain products and services. For example, passenger cars with high CO2 emissions are taxed more heavily than zero-emission or low-emission cars. This principle may also be applied on a wider scale in the circular economy. Taxes on primary raw materials may be raised, taxes on labour and recycled products may be reduced. However, this is a complex matter involving many regulations, both at home and abroad. The concrete action consists of appointing a committee to develop a well-considered and widely supported proposal to this effect, commissioned by the Cabinet. First of all, such a proposal can be based on the work done by the Netherlands Environmental Assessment Agency (PBL), Ex'Tax, and De Groene Zaak. The Social and Economic Council of the Netherlands (SER) is currently conducting a study into the matter and will publish its findings before the end of this year. Secondly, it would be wise to create room for small-scale experiments on several topics, such as reducing the tax on wages. These experiments must be coupled with research, in order to properly monitor both the negative and positive effects.

The Transition Team proposes that the options for the current set of tax, levies, and subsidy instruments be better geared to the circular economy. This effort must be given priority. In the coalition agreement, the Cabinet has indicated its intention to pump back the proceeds of greening into lowering the tax burden for residents and companies. The Transition Team advocates that this be linked to circular initiatives and business models of private citizens and the business community.

Despite the Cabinet's aim to replace fossil, critical, and non-renewable raw materials with abundantly available renewable raw materials, tax reductions for fossil fuels still exist in the Netherlands. A case in point is the low energy price charged to bulk consumers. The Transition Team calls on the Cabinet to abolish these tax reductions as quickly as possible, and pump back the proceeds into lowering the burden for circular initiatives and business models of private citizens and the business community.

**Concrete action 1.** Explore the options for putting a substantial price tag on CO2 emissions (for example, EUR 100 per tonne). A first step under this Transition Agenda is the introduction of a shadow price in tender procedures from both the procuring government and the procuring business community.

**Concrete action 2.** Appoint a Cabinet committee to develop a long-term plan for tax incentives, in part based on the work of the Social and Economic Council of the Netherlands (SER), with room for experimentation. Follow the Conclusions of the Environment Council dated June 2016 and, in 2018, tie in with the OECD efforts in this field.

**Concrete action 3.** Abolish subsidies and tax reductions for fossil fuels, and use the proceeds to further the circular economy.

### 3.1.2 INTERNATIONAL COLLABORATION

As stated in Chapter 2, the efforts to establish a circular economy in the Netherlands are strongly intertwined with the international context. Under the various actions suggested by the Transition Team, it is specified whether they can be tackled at the national or at the international level. The Transition Team believes that additional attention should be focused on the opportunities offered by international collaboration, along with the consequences of their approach in terms of scale level. Expansion of the export opportunities for companies pioneering in the field of the circular economy requires particular attention. In this context, it is also important to realise that the increased export of circular products can directly foster development cooperation goals. A strong Wikipedia-like environment in which all the expertise, examples, and options for the circular economy worldwide are accumulated can be a good step in this respect. The circular economy expertise map developed by Het Groene Brein constitutes an appropriate foundation for such an environment. A firm commitment to Holland Circular Hotspot is essential. Under this umbrella, several parties from government bodies, research institutes, and the business community are collaborating on creating a strong international profile for the Netherlands in the field of the circular economy.

In addition, the collaboration under the Raw Materials Agreement can be followed up by collectively lobbying the European Union, in particular. A key element in such lobbying should have to be the expansion of the Ecodesign Directive from energy to materials and resources (i.e., circular economy). It would be interesting to explore, in this context, how the Stakeholders Forum can be used to further the circular economy. Another logical step would be to link up with the World Circular Economy Forum.

**Concrete action 4.** Reinforce the Holland Circular Hotspot collaborative. Review the options for setting up, on the basis of existing initiatives, a wiki environment focusing on the circular economy and holding global appeal.

**Concrete action 5.** Initiate a collective lobby of the European Union under the Raw Materials Agreement, with as a first topic the introduction of a circular economy and the optimum use of raw materials in the Ecodesign Directive. A second topic could be the expansion and intensification of Extended Producer Responsibility, with a focus on the expansion of the Ecodesign Directive (cf. Action Items 6 and 7). A third topic could be waste policy and a fourth could be enforcement of direct import (cf. Action Item 14).

### 3.1.3 PRODUCER RESPONSIBILITY.

The Transition Team has concluded that the producer responsibility (EPR) instrument constitutes an essential part of potential measures to expedite the transition to the circular economy. We know from experience that the tool, provided it is used properly, is effective and can be implemented relatively quickly. EPR affords the business community the freedom to choose, within the preconditions and objectives agreed upon, which method to employ to optimise the environmental gain while minimising the cost. It is an effective tool to be used until the circular economy goes mainstream.

In this stage of the transition to a circular economy, producer responsibility can be an important instrument for rendering manufacturers and importers (jointly) responsible for the collection, processing, and recycling of the products marketed by them. This instrument thus aims to incorporate the costs of product waste management into the product price, in order to promote the reuse and recycling of discarded products, and in order to encourage producers to convert to ecodesign. The existing producer responsibilities in the Netherlands (inter alia, for electrical appliances and car wrecks) primarily ensue from European regulations.

Points for attention in the organisation of producer responsibility:

- Rather than solely on the waste issue, the focus must specifically be on the design side of a product.
- Prior to introduction, clarity must be provided regarding collection, sale, and quality of the secondary raw materials that could be generated from the waste matter in question. This framework must be set down in consultation with the parties involved, such as the recycling industry.
- The R ladder can serve as the basis for the high-grade retention of materials in the loop.
- In this context it is essential that residual flows designated as waste under the current agreements can be used as secondary raw materials.
- The current collection and recycling standards, based on mass percentages, provide insufficient incentives for a continuous effort to optimise the high-grade reuse of products and materials.
- A covenant is a practicable format for voicing ambitions and gathering parties together in a visible manner.
- Opt for producer responsibility as a guiding principle if such is practical, logical, and feasible in the physical waste and reuse chain of the product groups in question. The degree of professional organisation among the sectors concerned constitutes a key precondition for success.
- Have sufficient awareness of mutual dependencies, as most cases involve chain performances. Ergo, ensure firm commitment among all participating parties, based on a substantive multi-year programme that directly relates to the (EU) goals to be attained.

In addition to the above points, another question in the debate on producer responsibility is what the Netherlands can address and implement of its own accord,

<sup>8</sup> Based, in particular, on the EY study entitled 'Exploration of the role of Extended Producer Responsibility for the circular economy in the Netherlands.' June 2016. Maarten Dubois.

and what would preferably have to be addressed at the European level. EPR measures pertaining to the end of the chain, i.e., the collection of used products, can be addressed independently by the Netherlands. Measures that deal with the marketing of other products, for example, through the Ecodesign Directive, must be tackled at the EU level, as most consumer goods are imported in the Netherlands and the Dutch market is too small to steer its own course in this respect. Measures will be more effective if arranged at the European level. Of course, Dutch parties can make a case to this effect.

Based on the above, the Transition Team advocates expanding EPR in the Netherlands with new product groups and intensifying the existing forms with new measures.

### EXPANDING PRODUCER RESPONSIBILITY TO INCLUDE NEW PRODUCT GROUPS

The Transition Team advocates the expansion of producer responsibility to new product groups. Disposables, textiles, and furniture appear particularly eligible. As yet, these large flows are still insufficiently collected and recycled, whereas they are quite common in litter. Take, for example, cigarette butts. The Government-wide Programme for a Circular Economy also suggests expansion to new product groups, listing EPR for textiles, mattresses, and nappies as an option. Depending on the context, this may be structured in various ways for each product group, if possible on a voluntary basis and imposed, where need be, through regulations. How the EPR can be structured and which ambitious objectives will be set will need to be investigated for each individual product group, in close consultation with the manufacturers. By preference, this must be arranged at the European level, with a view to the aim of creating a level playing field within Europe. However, if this takes too long, we can always explore the option of having a number of progressive member states and sectors set down a uniform EPR system. This is in accordance with the strategy chosen in the international Green Deal North Sea Resources Roundabout (NSRR).

A specific area for attention in this respect is combating litter through EPR. In the Netherlands, litter is mainly comprised of a combination of packaging materials, chewing gum, and cigarette butts. The costs of cleaning up these spills are now largely borne by municipal tax payers. Expansive EPR provides an opportunity for internalising these social burdens and lodging them with the consumers and producers of the (packaging of) products featured in litter. It thus provides an incentive for manufacturers to increase their focus on innovation and prevention. For this reason, the Transition Team proposes that a new EPR scheme be introduced for litter.

### INTENSIFICATION OF PRODUCER RESPONSIBILITY

In addition to an expansion to new product groups, the Transition Team advocates employing the EPR tool in a manner that encourages companies to engage in the circular economy. By implementing various intensification measures, EPR can be used to serve other purposes in addition to recycling, as demonstrated by experience gained in France. For example, a diversification of waste disposal fees could foster ecodesign. Furthermore, within recycling targets a distinction could be made between high-grade and low-grade forms of recycling. Assessments could be based on reuse of scarce materials (e.g., Rare Earth Elements) rather than the total weight of reused materials. And the EPR role could be extended to the export of second-hand goods (e.g., electronic devices) to developing countries, in order to ensure the proper processing and recycling of such goods.

The Transition Team sees particular potential in intensification measures that boost the effectiveness of EPR from an ecodesign for circularity point of view. For example, by a diversification of rates, starting with those applicable to plastic packaging: a lower rate to consumers or a bonus for products that score well on circularity (higher recyclability, higher reparability, more recycled content), a higher rate for products that score poorly. The differences must be substantial, significant, based on a product's environmental impact across the entire chain, and based on the degree of circular re-design.

An important knowledge issue is how the intensification measures can be introduced effectively. For that reason, the Transition Team is making out a case for further study, as a first step, into the potential of such measures. Short-cycle products such as packaging are already partially covered by producer responsibility. Among other things, the study will have to reveal how intensification measures can be applied to this product group. Involvement of the parties associated with the Netherlands Enterprise Agency (ROV) is important in this respect. The study would also need to explore the national-level options and matters for which a European approach would be desirable or required. For example, a European approach will probably be necessary for the promotion of ecodesign through EPR. With its relatively small market, differentiation of waste disposal fees in the Netherlands will be less effective than coordination of such fees at the European level. For that reason, the Transition Team advocates a rapid implementation of the European Commission's proposal to introduce such differentiation within the EU.

It is not just up to the government to take the initiative to introduce intensification measures. For example, companies may choose to take back their own products, e.g., with a return guarantee, rather than joining collective collection and recycling systems. This will generate mono flows with opportunities for refurbishment, reuse of components, and more high-grade reuse of specific materials.

A final important issue in the elaboration of such measures is to review their interconnectivity with the international corporate social responsibility covenants pertaining to, e.g., textiles, as the introduction of EPR might have a positive impact on several topics on the Development Cooperation agenda. This positive interaction must be examined in more detail.

<sup>9</sup> The cigarette butts in public spaces phenomenon is a pre-eminent example of disposable products qualifying for a circular approach to prevention, design, and return logistics.

This is why the Transition Agenda for Plastics proposes that a study be conducted to explore the option of developing EPR for the tobacco industry. Cigarette filters contain a relatively large volume of plastics.

<sup>10</sup> Similar proposals for the intensification of EPR are made in the Transition Agenda for Plastics (e.g., in the automotive and consumer electronics domains).

<sup>11</sup> Proposed in 'Closing the loop – An EU action plan for the Circular Economy (2015)'.

## ENFORCEMENT AND EPR

The EPR system is functioning well. However, a next step towards the circular economy calls for additional measures, in particular with respect to enforcement. Waste is big business, and illicit collection and processing still pays off. The social damage due to improper waste processing is estimated at 2.45 billion euros per annum (source: Human Environment and Transport Inspectorate, ILT). Enforcing regulations and supervising waste processing are responsibilities and tasks of the government. The unruliness in actual practice means that the role of supervising and enforcing bodies is a difficult one, but commitment, enthusiasm, and focus are already producing fine results here. However, a precondition is that they are given sufficient scope by their municipal principals. This calls for a more national approach, and for more efficient collaboration with other enforcement organisations and stakeholders.

**Concrete action 6.** Study the option of extending EPR to the product groups of disposables, furniture, and textiles.

**Concrete action 7.** Study the option of intensifying EPR in the Netherlands, for example, by a stronger focus on incentives for, inter alia, circular design, repair, and refurbishment. A first step in this direction is fleshing out the options in the Netherlands, in part based on experience gained in France.

### 3.1.4 PROMOTING INNOVATIONS

Innovations are needed, in both technical and social fields, in all stages of the life cycle, and with respect to short-cycle products as well as medium-cycle and long-cycle products.

Many of the measures outlined in this chapter pertain to a more efficient utilisation of the application value of raw materials and the systems that can bring this about, such as different forms of waste collection or increased producer responsibility. The essence of the tasking is, however, for companies to directly link market incentives to incentives relating to the creation and retention of social and ecological value. Supplementary to the measures already proposed in paragraphs 3.1.2 and 3.1.3, the Transition Team recommends that the various “Circular Valleys” in the Netherlands be given a much stronger position and increased international exposure, from this perspective. This is based on the experience that smart, long-term investments in innovative agriculture - (Wageningen), the water sector (Wetsus Leeuwarden), and the high-tech sector (Brainport Eindhoven) provide huge momentum to Dutch innovations and entrepreneurship. Cases in point include innovations such as 3D printing and block chain technology, in which Smart Industry and Smart Cities are combined with the circular economy. This is demonstrated by, inter alia, the 3D Makers zone in Haarlem featuring innovative companies, an expertise cluster, and supportive municipal and provincial authorities. A Circular Valley for fashion and textiles, pooling all the strengths of innovative businesses in Twente, Tilburg, Amsterdam, and other parts of the Netherlands, offers an interesting perspective in this context.

Essential in this respect is the availability of additional funding, in particular for start-ups and SME companies, and that such companies are actively supported in taking steps towards the circular economy. This can be achieved, e.g., through a “desk” or a knowledge platform that actively supports entrepreneurs in locating resources. Such a desk or platform can be operated either by the government or by regional funds. The government can also act as a “launching customer” in this process.

The logistics sector merits individual attention when it comes to innovation. This sector is currently substantiating many innovations relating to energy efficiency and cost savings. An essential component is the development of forms of collaboration between the logistics parties, covering both delivery logistics and reverse logistics (return flow logistics). Currently, for reasons of competitiveness, not all deliveries are made with optimally loaded vehicles. Theoretically, models exist involving effective collaboration between parties in this field, resulting in a considerable reduction in the volume of logistics movements. In practice, however, such models do not yet function adequately.

## CONTRACT FORMATS

In the circular procurement of consumer goods, three main contract formats can be distinguished that can enhance the circularity of a product flow.

### 1. PRODUCT SERVICE SYSTEMS

“Pay per use contract”: the purchasing organisation pays for the use of the product, but ownership remains with the manufacturer/supplier, performance-based contract.

### 2. PURCHASE-REPURCHASE

In this case, the purchasing organisation becomes the owner of the product. Both parties agree that the manufacturer/supplier will buy back the product at the end of its useful life.

### 3. PURCHASE-RESALE

Upon the purchase of the product, both parties set down that after use a third party will take care of the products and/or materials in a circular fashion.

**Concrete action 8.** Strengthen entrepreneurship and innovation promoting the circular economy by setting up several Circular Valleys. A first step in this direction is combining the various hubs that exist in the fields of fashion and textiles. A second step is to do the same in other fields and to draw up a plan for the expansion of these Valleys based on their needs. These Valleys can be directly linked to the Holland Circular Hotspot strategy, to enhance their international exposure and collaboration. In addition, within this context separate attention must be focused on social innovation in the logistics sector and on strengthening support of the SME sector in this field.

## 3.1.5 PROCUREMENT AND STRENGTHENING MARKET DEMAND

In the years ahead, within the context of Socially Responsible Purchasing and the motion adopted by the House of Representatives to raise the proportion of circular procurement to 10%, governments and businesses can actively embark on circular purchasing. This is vitally important, considering the fact that circular procurement is a driving force for the circular economy. Circular purchases can directly lead to a functioning circular business case. In addition, the Netherlands will directly benefit from more circular initiatives abroad. Such initiatives can be encouraged, for example, by promoting circular procurement abroad, e.g., through close collaboration between cities. An economy of scale can thus be realised.

Existing policy is already geared to circular procurement. Circular procurement is a component of the government-wide strategy for socially responsible purchasing. This strategy focuses on several aspects (see Plan van Aanpak MVI 2015-2020 [Strategy for Socially Responsible Purchasing 2015-2020] and Manifest MVI 2016 t/m 2020 [Socially Responsible Purchasing Manifesto 2016-2020]), such as the professionalisation of purchasing, the embedding of socially responsible purchasing throughout the organisation, and the translation of the ambitions of (semi) government institutions to their own purchasing procedures. These aspects constitute the essence of the socially responsible purchasing strategy of the national government; they are endorsed by more than a hundred governments associated with the Manifesto. Meanwhile, a “circular procurement academy” has been established for local governments. In 2018, the follow-up to the Circular Purchasing Green Deal will be signed; along with governments, a large number of businesses have joined this Green Deal. This means that the Transition Agenda is not starting from scratch in this respect. The first steps have been taken. We now need to start implementing the lessons learned from the Circular Purchasing Green Deal on a wider scale and to find solutions to bottlenecks in the upscaling of pilots. That is why we must firmly support the follow-up to this Green Deal and raise our ambition beyond 10%.

By 2030, circular procurement must be easy and common practice for companies and governments. The same applies to parties from the education sector and the cure and care sector, such as hospitals. In the introduction process, use can be made of adopted standards, such as ISO 20400 for sustainable procurement. A point for attention in this respect is that the tender procedures and other procedures must enable the SME sector to actively participate.

**Concrete action 9.** Governments and companies switch to circular purchasing with an eye for new revenue models. By 2020, “circular” will be included in all tender procedures for consumer goods, unless such is impossible or undesirable. In such cases, the reasons why such is impossible in the tender must be provided (by the tendering service) or why such is impossible at the time of supply. This is set down in each tender procedure and recorded in Tenderned. In 2018, the national government will step up its efforts by launching two pilots for specific product groups relating to consumer goods.

### 3.1.6 BEHAVIOUR

A more efficient consumption of our products is not a task incumbent on producers alone, it is also a task for consumers. Whether they are purchasing, using, or discarding, consumers must make different choices in their role, for example, in the prevention of litter. We need to depart from old habits (buying something and discarding it after use) and move on to new procurement options (such as sharing or repairing), and we need to change our attitudes towards waste (“is this still a resource?”). The standard option, the easiest choice, must be the circular option. In the first place, this requires a shift in the standard range. Refuse and reuse are thus no longer “acts of heroism”, but rather the new default.

The main shift in standards to realise this new default involves a different mindset: we go from owner to user. A slight shift can also be observed in the preference for the sharing economy and the access economy. More and more people acknowledge the benefits of temporary access over ownership. However, the ones actively engaging in such efforts are the real front runners, the early adopters. The sooner the early majority joins in, the sooner the standard will change.

A large group of consumers appear to be willing to embrace sustainable consumption, provided it is simple, clear, and not (much) more expensive. Furthermore, a (limited) group of people is prepared to pay more for consumer goods bearing a hallmark or with lower CO2 emissions. The fact that new habits are actually difficult to acquire can mainly be attributed to social and physical conditions, such as a shop assistant kindly offering a plastic bag, or the lack of feedback from the government regarding what happens with the results of waste separation. People have no perception of the repair options or what happens with discarded things. In part, options for adopting circular behaviour are not yet widely available or joining in simply costs too much trouble or money. For that reason, it is important to make circular behaviour easier and remove doubts among consumers. In addition, the price of circular products in the price structure must be lowered, for example, by imposing lower tax rates. All this on the basis of facts and validated insights rather than feelings and emotions.

In effecting a change in behaviour, the Transition Team focuses on the concept of small wins: many small steps lead to big changes. What we require of people is a new default, a different outlook on existing standards, rational beliefs and habits. Such a shift in standards cannot be realised at short notice through large-scale intervention. People need to break old habits, experiment, and adopt new ways that tie in with the circular economy. A small-scale, in-depth intervention is, however, possible and would produce long-term change: “A fast-moving sequence of small changes can more speedily accomplish a drastic alteration of the status quo than can an only infrequent major policy change.” This principle of small changes is referred to as “small wins”. To consumers, the transition thus becomes far more structured and concrete. Renting a shared-use car for a day is simpler than “living sustainably” or “going circular”. More details about the backgrounds to behaviour and dealing with small wins can be found in the Milieu Centraal report entitled *De transitie naar een nieuw normaal* [The transition to a new default]. This report includes a table listing many actions for consumers to participate in.

**Concrete action 10.** Give consumers an action perspective by focusing on small wins and ensure that the required basic conditions are in place. As a first step in this process, campaigns must be launched to promote the extension of product lives through repair, disassembly, refurbishment, and sharing.

### 3.1.7 EDUCATION AND RAISING AWARENESS

Behaviour, awareness, and competencies strongly feature in all debates about the circular economy. It is not just about making certain choices as a consumer. The competencies of professionals are also essential in this respect. Particularly great gains are to be made in vocational education and pre-vocational secondary education, because these schools produce the people who will be substantiating the circular economy. A host of initiatives already exist that are taking small steps, in many cases independently, but together they have not managed to turn over the entire education system. This requires more action and more coherence, with a firm impetus, supported by the Ministry of Education, Culture and Science. The outcomes of the study conducted by the Schnabel Committee and the Curriculum.nu initiative provide concrete options to this end. The Transition Team proposes that the parties involved, among which the Ministry of Education, Culture and Science, actively elaborate such options in the sustainable and circular education master plan.

**Concrete action 11.** Develop a master plan for sustainable and circular education (Circular Skills). The activities of the Coöperatie Leren voor Morgen [Learning for Tomorrow Cooperative], the IKcircuLEER organisation, and the white paper on Circular Education can serve as a basis for such a plan. A first step must be the organisation of a working meeting to elaborate this master plan, on the basis of the Social Agenda and the Knowledge Agenda in the Raw Materials Agreement.

<sup>12</sup> Termeer, C.J.A.M., Dewulf, A. & Biesbroek, G.R. (2017). ‘Transformational change: governance interventions for climate change adaptation from a continuous change perspective.’

*Journal of Environmental Planning and Management*, 60 (4), 558-576.

<sup>13</sup> Lindblom, C. (1979). ‘Still Muddling, Not Yet Through.’ *Public Administration Review*, 39 (6), 517-526

### 3.1.8 PHASING OUT NON-RECYCLABLE PRODUCTS

A firm, collective commitment to circular design, circular business models, and efficient collection and processing will accomplish a great deal. However, both current and future societies feature many products that are poorly suited to high-grade repurposing, such as a couch incorporating wood, plastics, and textiles all glued together. The Transition Team believes that phasing out poorly recyclable products must be a point of departure.

However, this cannot be achieved quite so easily. First of all, from an international perspective, the ecodesign standard is not yet a guiding principle in production. This means that in the near future, non-recyclable or poorly recyclable products will continue to enter our country. Consequently, additional investment in separation technologies is essential, in order for such products to be utilised nonetheless once discarded.

Secondly, new insights into toxic substances will continue to be developed. For example, asbestos used to be regarded as non-harmful. In the future, new insights may develop regarding other substances. These can hamper the recycling of valuable raw materials. The same may apply to the aim of phasing out widely spread traces of toxic substances in our society. The Transition Team recommends that the government opt for a risk-based approach to this issue. Only opt for recycling raw materials containing toxic substances if this does not pose a threat to human health or the environment. Opt for the destruction of such raw materials if this is necessary to prevent any unnecessary claim on future recycling.

To substantiate the phasing out of non-recyclable products, the Transition Team proposes the following.

- Cut back the sale of non-circular products by:
  - setting down dynamic circularity frameworks, in collaboration with the Dutch standardisation organisation NEN;
  - listing the products that need to be phased out;
  - exploring which measures will be effective in phasing out these products. It would be wise to start small in this respect (small wins).
- Deal with poorly recyclable products that are currently on the market by:
  - processing them properly;
  - providing insight into which products are concerned;
  - actively developing technologies to this effect.

**Concrete action 12.** Develop a plan for the repurposing of consumer goods that are not suited to high-grade recycling, focusing additional attention on separation technologies and a risk-based approach to toxic substances. All this on the basis of the strategy outlined above.

### 3.1.9 HIGH-GRADE RECYCLING INDUSTRY GEARED TO THE CIRCULAR ECONOMY

In part, the circular economy can be concretised within the existing and future recycling industry. This sector has already contributed a great deal to the reuse of used materials and has the potential to further develop into an environment that fosters the circular economy. In this respect, the recycling industry can focus on the supply of secondary raw materials of a quality equal to that of primary raw materials.

Furthermore, the raw material recycling processes must take increasing account of their impact on a third cycle of use or even beyond. Steps must be taken to realise such a situation. One aspect to be considered is ensuring the continuous quality of secondary raw materials, in such volumes as are required by the manufacturing industry. In this context, the collection and separation of waste must be subservient to the price-quality ratio demanded by the market. This requires optimisation of the entire chain, from separation at source up to and including processing to regenerated material.

**Concrete action 13.** Develop a strategy for the development of a recycling industry that is geared to the price-quality ratio of secondary raw materials and more efficient recycling, which would also enable another high-grade use of materials in the next chain. This action can elaborate on actions already launched by the sector and the national government, for example, under the Waste to Resources (VANG) programme and the More and Better Recycling Covenant. In due course, this can be expanded further. One of the ways in which this action must be substantiated is the design of an iconic project; see Chapter 4.

### 3.1.10 DEVELOPMENTS AND TRENDS IN RETAIL TRADE

#### ONLINE AND OFFLINE ARE MERGING

In the decade ahead, millions of shops and service agencies will change from traditional businesses to “connected stores” that are online 24/7. A proportion of such stores consists of international companies that do not operate a separate branch in our country, such as Zalando and Amazon.

#### CONSUMERS ARE BUYING INCREASINGLY MORE FROM WEB SHOPS/RETAILERS ABROAD

According to a study conducted by Eurostat, by now 25 per cent of those purchasing products or services online do so from a web shop or service provider in another EU country. If the trend manifest over recent years continues, this proportion will be rising sharply in the years ahead. In many cases, it is not easy to tell whether a web shop is established in our country or elsewhere.

#### IMPORT FROM THIRD COUNTRIES

A large proportion of the products in shops originates from third countries, e.g., Asian countries. Some of these involve brand products from large, international manufacturers, some are private label products. Nowadays, consumers buy increasingly more outside the EU through web shops such as Alibaba: the so-called direct import. These web shops also sell products that fail to meet the high quality and safety standards in place in the EU. This has a negative impact on the level playing field for the entire retail trade, both online and offline.

#### SINGLE DIGITAL MARKET

The European Union pursues a uniform, freely accessible digital market in all member states, in which strict restraints will be imposed on geo blocking. A duty to sell will be introduced for web shops throughout the EU.

**Concrete action 14.** Conduct a collective lobby campaign at the European Union, under the Raw Materials Agreement, aimed at reinforcing the regulations in the purview of a level playing field, in particular relating to online sales and focusing specific attention on enforcement with respect to direct import from third countries.

### 3.1.11 SUPPLIERS

In the circular economy, significant attention is paid to other business models and the use of other materials. In many cases, it is left up to the manufacturers to take the initiative and to the government to set down univocal frameworks to this end. In addition to these parties, the suppliers of the products and materials play a pivotal part in this, as they can expedite the transition to a circular economy by taking a proactive stance in this respect. For suppliers, this is quite difficult, because they normally operate on the basis of demand. Furthermore, many suppliers are SME companies whose R&D capacities are, in many cases, limited. In order to be able to take more steps in this direction, it is important for suppliers to be actively involved in the discussions about the circular economy and to further explore the options for these parties to help give impetus to the circular economy.

**Concrete action 15.** Develop a plan for suppliers within the framework of the circular economy.

### 3.1.12 DEVELOPMENT OF SECTOR PLANS

Many of the actions set out in the Transition Agenda are cross-sectoral and applicable to, e.g., both furniture and textiles. However, the strategy can be even more effective if sectors are challenged, in accordance with the approach set down in the Transition Agendas, to come up with an ambitious sector plan featuring mutual agreements on a concrete growth path to circularity. Concrete actions for the sector in question must be elaborated in such a plan, based on the objectives and principles outlined in Chapter 1. The proposal is to elaborate this for multiple sectors, such as furniture, textiles, electrical appliances, and packaging. The initial outlines of a specific action agenda for these sectors have already been indicated during the development of this Transition Agenda. Several parties may take the lead in this process; in any case, a key role can be played by the sector organisation concerned, assisted by relevant parties that are currently not affiliated with that sector organisation. Chapter 4 provides a starting point for the sector plans, including one or more iconic projects. The choice for these sectors is not intended as an exclusive one; the Transition Team also calls on other sectors to draft such a sector plan.

In the sector plans, creating as much synergy as possible is essential. After all, the same resources and materials feature in other sectors.

**Concrete action 16.** Work out an action plan for several sectors. The first step must be the development of a draft sector plan by the sector association, in close collaboration with the Transition Team. This first step has already been addressed; the current state of affairs is reflected in Chapter 4.

### 3.1.13 AMENDMENT OF LEGISLATION AND REGULATIONS

Several sections of the Transition Agenda for Consumer Goods feature action items that have ramifications for legislation and regulations. The proposed amendments must always be regarded as a means to attain the circular economy goals. If some other means is more effective to attain the goals, then that means can be considered. In addition to what is discussed in the Transition Agenda, the debate on waste legislation has been going on for years. This paragraph addresses that issue in more detail.

Current (waste) regulations are based on a linear economy in which we manufacture, use, and subsequently discard products (end-of-life). In a circular economy, we attempt to convert all production residues and residual flows during the production stage into materials and substances of the highest grade possible, in order to upgrade the (remains of) products after the usage stage to new raw materials and products. The current legislative system, in which substances and materials are classified and qualified as either a product/raw material or as waste matter, is not quite geared yet to the circular economy. Different interpretations by enforcing and supervising bodies may lead to uncertainty and inequality among both private and public stakeholders. The new National Waste Management Plan (LAP3), however, already anticipates the circular economy.

The implementation of the current waste regulations generates a number of obstacles.

- The designation of a reusable material or substance as waste could hamper the high-grade utilisation and marketing of such substance, especially when it is exported. Concurrently, under the Dutch National Waste Management Plan, the concept of waste matter also entails the option of aiming for high-grade reuse (minimum processing standard).
- Material with a waste status may hold little appeal.
- At the (national) policy level, the authorities are often prepared to facilitate circular market initiatives. Yet elsewhere in the chain, a business may still be deadlocked. This happens at the national, provincial, and municipal levels, but also in the field of roles such as policy, licensing, supervision, and enforcement. When setting down national circular policy, sufficient support must be secured from all government tiers, to ensure that these parties are committed to such policy and act upon it. All this within the responsibility for other interests, such as the duty to preserve the environment.
- In addition, albeit that European coordination is desirable, it is not feasible in the very near future and not strictly necessary to take some significant circular steps.
- The formulation of policy must cross both sectoral boundaries and policy fields.

**Concrete action 17.** See to it that existing waste legislation and regulations are rapidly amended in such a way that thinking in terms of waste and residual flows (by origin) is converted into thinking in terms of repurposing (raw material for a particular application). The current system of licensing, enforcement, and supervision must be included in the amendment. As far as European regulations are concerned, this can only be achieved through active input from the Netherlands, preferably together with like-minded member states in European policy processes.

### 3.2 SHORT-CYCLE PRODUCTS

“Circular thinking is the only tenable model.”- Marga Hoek, Business for Good

Short-cycle products are characterised by single or short use; by their nature, repair and refurbishment do not make sense. Ergo, the focus here is on the prevention and reduction of the use of resources. We will discuss the options in the three life stages of such products: design and production, retail and usage, and finally reuse of the product.

Packaging plays a key role in short-cycle products. Many efforts have already been launched with respect to packaging and circularity. Essential in this respect was the introduction of EPR for packaging, which was immediately followed by the foundation of the Netherlands Institute for Sustainable Packaging (KIDV). Meanwhile, the KIDV has amassed a wealth of information on the circular economy in relation to packaging. In developing the insights set out below the Transition Team has used KIDV material.

In addition to packaging, everyday utensils such as cups and containers play a key role. Circularising these products will immediately manifest the circular economy among consumers.

<sup>14</sup> See, e.g., <https://www.kidv.nl/7047/oogst.html?ch=DEF>  
<https://www.kidv.nl/3401/activiteiten.html?ch=DEF&category=7398>.



*Credit: Kiekuniek*

### **BALES OF DISCARDED DISPOSABLES**

Disposables and packaging are predominantly made of plastic and often used but once. Examples are plastic cups, bottles, and cling film. It is important that utensils with limited functionality are replaced by sustainable alternatives, wherever possible, and that superfluous packaging is minimised. Products that are still used, for example, to counteract wastage of food, must be designed in a manner that ensures that incineration is not the only option. In this respect, we are aiming for recycling and repurposing.

### 3.2.1 DESIGN AND PRODUCTION STAGE

Reducing consumption plays an important role in the goals pertaining to the R ladder referred to in Chapter 2. The Transition Team regards a reduction in the volume of unnecessary products and the circular design of such products as key solution strategies.

In this respect, the Transition Team is considering, for example, the abundant flow of promotional gifts, reference books, annual reports, welcome presents, loyalty gifts, and gadgets, most of which are offered free of charge and which are impossible or difficult to refuse. In actual practice, such products turn out to serve hardly any purpose other than a ceremonial one. In many cases, they are discarded after use or even without having been used.

#### REDUCTION OF UNNECESSARY PRODUCTS

The highest rung on the R ladder is Refuse: refusing or ceasing to offer things. For things whose functionality is limited, or which are easily replaced by sustainable alternatives, this may be the highest goal. The reduction of superfluous packaging also merits attention in this context: for example, decorative packaging and excessively large shipping boxes. Sustainability must be an integrated consideration in the application and issuing of such materials and products. This market may have a significant impact, not just in relation to the actual utility value of these things, but also on their image. After all, giving away such products for free and/or the use of superfluous packaging counteracts the image that raw materials hold value.

Whether a reduction in the volume of such products should be achieved through bans, specific campaigns, or other tools will need to be considered on a case by case basis. The vehicle must be geared to the purpose and be proportional to the environmental gain. Several parties promote prohibition as a means to achieve the goal. An overall ban or a ban on giving away for free may be considered for a number of disposables or short-cycle products. The ban on free plastic bags shows that this is feasible and that it works. This ban has commanded support within society, as demonstrated by its smooth introduction and acceptance. However, public support may not be a condition sine qua non, as in many cases public support will develop of its own accord once the measure has been implemented. A precondition is that the measure must be commensurate to its impact: if the gains are insufficient, people will feel as if they are not taken seriously. A ban is most effective if the actual results are manifest to everyone, e.g., a clear impact on waste and the environment.

The Transition Team believes that a focus on influencing social standards is also necessary in this respect. For example: teaching people to politely turn down the aforementioned promotional gifts, and to reconsider the purchase of single-use products such as disposable tableware. In addition, those giving away free promotional gifts can be inspired to substantiate their appreciation in other ways. If such products serve a strong marketing purpose and a reduction of their use cannot be achieved through behavioural influencing alone, the government would have to discourage their use.

#### CIRCULAR DESIGN OF SHORT-CYCLE PRODUCTS

Wherever possible, products can be designed in a manner that prolongs their life, so that they become medium-cycle products. The essence here is moving on from single use to long-term and multiple use. However, cutting back on use or designing products for long-term use is not always feasible or desirable. This applies, e.g., to the packaging of fresh products, which prolongs their shelf life. In such cases, sustainable raw materials must be used wherever possible, and the product must be designed in a manner that facilitates separate collection and reuse or recycling. The use of mono materials is an essential factor here. Another important factor is the transition to bio-based materials, whose market introduction is still hampered by several obstacles.

The Transition Team is aware of the important role to be played here by the triangle between government, NGOs, and the business community. Initiating a collective campaign with concrete perspectives for action can set the influencing of social standards off to a good start. This Agenda pertains to a wide range of products. With a view to creating clarity with respect to subsequent steps, the Transition Team proposes the following framework for action:

- Phasing out free articles or replacing them by long-cycle alternatives;
- Making packaging more sustainable;
- Making disposables such as disposable tableware, cups, disposable barbecues, and inflatable pools more sustainable and developing long-cycle versions.

**WITH RESPECT TO SHORT-CYCLE PRODUCTS, WE PROPOSE TWO CONCRETE ACTIONS IN THE DESIGN AND PRODUCTION STAGE**

**Concrete action 18.** Reinforce the innovation of products. Design short-cycle products using sustainable materials, in a manner that facilitates high-grade reuse. Essential in this respect is, inter alia, the use of mono materials. A first step in this process is setting up specific short-cycle product tracks in the CIRCO [Creating business through circular design] project. CLICKNL (the Dutch Creative Industries Knowledge and Innovation Network, initiator of the CIRCO project) can take the first steps in this process together with manufacturers. Options for doing so in an international context still need to be explored in more detail.

**Concrete action 19.** Explore the most effective measures to prevent the use of unnecessary products, for example, specific bans, design with a view to reuse, and collective campaigns, taking experience gained in other countries into account. A first step would be an (international) exploration of the impact of and public support for measures pertaining to certain short-cycle products. The Ministry of Infrastructure and Water Management can commission such an exploration in close collaboration with several NGOs and businesses.

**3.2.2 RETAIL AND USAGE STAGE**

The use of short-cycle products must be pushed back as much as possible. We need to dispense with the unnecessary consumption of products and packaging. Sustainable alternatives for many disposables such as nappies or baby wipes and packaging are already available. The same goes for foodstuffs, for example, by switching from animal to vegetable food products (cf. the Transition Agenda for Biomass & Food). The use of such alternatives entails a changeover in lifestyle for many consumers. The retail and wholesale sectors may be of assistance here. They serve as a vital link to the consumer. Retailers largely determine which products and services will be offered, thus influencing the decision-making processes of consumers and organisations. For that reason, the retail and wholesale sectors may support consumers by, e.g., offering more sustainable products or products without unnecessary packaging.

In addition to the development of sustainable alternatives, attention must be paid to packaging. The diversity in (combinations of) packaging materials renders their collection and recycling needlessly complex and limits the financial and environmental yield of the systems. A great deal is to be gained in this field, starting with locations at which companies and consumers have significant bearing on the composition of what is sold. Cases in point are the office, shop, and services sector, festivals, train stations, and event venues.

This is why the Transition Team proposes to draw up a plan of action, in collaboration with retail organisations – including the online retail trade – to offer sustainable alternatives as the new default. In the Netherlands, many efforts have already been launched in this field, initiatives with which the Transition Team would like to tie in. The first idea here is to work with concrete product-market combinations, especially because in such cases it is clear which agreements should be made with whom. The plan of action must also pay attention to international online web shops, such as Alibaba.

A new default is also required for the catering industry and for festivals. In consultation with parties managing major outlets, such as the NS railway company and festivals, a system could be introduced requiring customers to pay extra if they do not bring their own cup.

**WITH RESPECT TO SHORT-CYCLE PRODUCTS WE PROPOSE TWO CONCRETE ACTIONS IN THE RETAIL AND USAGE STAGE**

**Concrete action 20.** Develop a plan of action for sustainable consumption, in collaboration with the retail sector. A first step would be to set down, together with the physical and online retail organisations, a plan of action pertaining to a number of concrete product-market combinations and offer these as the new default. The Consumer Goods Transition Team proposes that it present this plan of action by mid-2018, together with Detailhandel Nederland [Dutch retail sector association] and individual retailers

**Concrete action 21.** Develop a “Green Deal for Waste-free Catering & Festivals 2.0”, in which the implementation of the new default constitutes a key element. A subsequent step could address circular festivals, tying in with the “Green Deal for Waste-free Festivals”. In this context, a project could be launched, preferably running over a period of four years, in order to enable a number of festivals to go fully circular by 2022. The knowledge and experience gained during this project could be shared with other festivals (both nationally and internationally).

### 3.2.3 REPURPOSING

The use of short-cycle products must be pushed back. Products or materials that are discarded must be put to use again at the highest possible rung of the R ladder. Consumers – individual citizens – play a key role in this respect. Several studies have shown that consumers are prepared to adapt their behaviour, provided this is simple. This fact is demonstrated by, inter alia, the separate disposal of glass and paper, which has already been embraced for years. Infrastructure must make it easy for consumers to separate discarded goods upon disposal. The more effort separate disposal takes on the part of consumers, the smaller the chance they will actually do so. This principle entails a number of consequences for the current collection system.

The parties involved in the current collection and sorting practice are, as yet, insufficiently capable of explaining to consumers how they can contribute to the high-grade collection and processing of waste. This has undermined public support for an effective and cost-efficient collection system. Concurrently, we see that the collection of, in particular, plastic packagings has boomed over recent years. In the current situation, however, the incentive for chain parties is mainly focused on quantity (separating as much as possible) and yet insufficiently on setting up a collection, sorting, and recycling system that would lead to high-quality recycling and applications in new products.

In addition to the above, the Transition Team has come to the following conclusions.

- There is no uniformity in the communication regarding waste separation (benefit and necessity). Furthermore, regulations as to what goes in which bin or bag differ from one municipality and outdoor location (such as railway station, office, school, sports club) to the next.
- Waste separation differs from one municipality to the next in terms of separation at source versus subsequent separation, separate or non-separate collection of organic waste, and the separate collection of plastics or PMD (paper, metal, and drinks packaging).
- Financial arrangements constitute the basis for the collection system. As a result, proper waste separation remains difficult for individual citizens. For example, it defies all logic that some products cannot be disposed of as plastics, “because they have not been paid for”. The usability of the material must be the deciding factor in terms of collection; funding must follow.
- As municipalities are responsible for the collection of the aggregate household waste, they opt for an optimum mix of collection, sorting, and processing for the entire package of household waste – and not just from a packaging point of view.
- Short-cycle products, such as tins and bottles, contribute to litter and affect the liveability of the Netherlands.
- European legislation distinguishes between urban and industrial waste, whereas the Netherlands distinguishes between household and commercial waste. This generates several bottlenecks:
  - Separation into household and commercial waste (which is similar to household waste) limits the effectiveness and cost-efficiency of the overall collection and recycling system in the Netherlands;
  - The Dutch Packaging Decree and the Framework Agreement II only cover the collection and processing of packaging waste produced by households. Consequently, there is no compensation for the collection and recycling of packaging waste produced by companies.
  - The excess of collection vehicles in old city centres and highly urbanised areas causes an undue burden. For example, the Pijp area in Amsterdam features a street that sees an average of seventeen different collection vehicles every day.
  - In many cases, waste separation for businesses is not mandatory, as a result of exception clauses in legislation and regulations. Consequently, a lot of recyclable waste still ends up in the incinerator.



Standard pictograms for waste separation

We must make it easier for consumers to separate discarded goods before disposal. Effectively influencing consumer behaviour requires the introduction of more univocal collection systems wherever possible, and uniformity in communications regarding waste prevention and waste separation. In response to many requests, Rijkswaterstaat has developed standard sets of colours, designations, and pictograms relating to waste separation. These pictograms are now made available free of copyright. The goal is to increase waste separation and improve the quality through easier identification and uniformity.

Credit: Waste separation pictograms: Rijkswaterstaat and Mijksenaar wayfinding experts, June 2017

The Transition Team bears in mind that by 2030, citizens must have a clear picture of the behaviour expected from them, whenever, wherever they go. By 2030, the collection and processing system must be geared to this goal. This means that by then, a solution must have been found for the above bottlenecks. For that reason, the Transition Team proposes that agreements be set down in 2018 relating to producer responsibility, the quality of collected short-cycle flows, collection systems, and communication. These issues are briefly explained below.

## PRODUCER RESPONSIBILITY

Waste is, in fact, a result of the manner in which manufacturers and retailers market their products and packaging, and the manner in which consumers subsequently deal with them. For that reason, the costs involved must, as a matter of principle, be borne by these parties through extended producer responsibility. The Transition Team expects that extended producer responsibility will generate effective incentives for manufacturers, retailers, and ultimately consumers, in order to develop a cost-efficient and effective return and recycling system and prevent the marketing of unnecessary products and packaging. This means that, as far as the Transition Team is concerned, producer responsibility would extend beyond the collection and processing of short-cycle (packaging) products and the associated costs. In this respect, it is important to take proper account of the experience reviewed by, e.g., the Netherlands Institute for Sustainable Packaging (KIDV) in its plastics chain study.

## QUALITY OF COLLECTED SHORT-CYCLE FLOWS

The following issues pertain to quality.

- Within one year, municipalities, manufacturers, and waste collectors will make agreements regarding a joint agenda. Which steps need to be taken in the chain in order to achieve better recycling results? One simple step involves keeping tabs on raw materials from collected packaging for which there is currently no demand. Can this lack of demand be attributed to their composition? To the collection method? Or to the sorting process? By finding answers to such questions, a collective innovation agenda will evolve.
- With respect to the flow of discarded plastic packaging, parties will agree, within the context of the evaluation of the Packaging Framework Agreement II, how they will ensure improvement in the quality of the plastics to be presented to the sorting and recycling plants.
- A potential long-term step is the collective adoption of future objective criteria to underpin municipal choices for a flow collection system. Municipalities will have to choose between, e.g., source or subsequent separation, PAYT, or reverse collection. This ties in with the From Waste to Resources programme (VANG), which also enables municipalities to learn from one another. Room for innovation remains important; after all, this is what brought us these systems. In this respect, more attention must be focused on learning from innovation, upscaling when successful, and stopping when apparently not on the right track.
- The Transition Team requests municipalities whose collection and recycling performances are clearly lagging behind to set down agreements to boost separate waste collection. Municipalities will be supported in their innovation efforts, in order to ensure that in a few years' time, separate collection will be the standard in all municipalities, districts, and neighbourhoods, including in relatively densely populated neighbourhoods featuring many high-rise buildings, and with respect to organic waste. If need be, the Transition Team will ask the national government which instruments to deploy if this strategy does not produce the results envisaged.

## COLLECTION SYSTEM FOR COMMERCIAL WASTE SIMILAR TO HOUSEHOLD WASTE

Under the VANG Buitenshuis programme [From Waste to Resources – Outdoors], solutions are being explored, in consultation with waste collectors, to the bottlenecks arising from the distinction between household waste and commercial waste. How can logistics processes be combined efficiently, and how can financial incentives be levelled up? The national government aims to provide room for experimentation in 2018 and develop an improvement plan for waste collection. In this light, the statutory duty for companies to separate waste will also be evaluated. Exceptions to the regulations will be minimised with a view to creating a transparent action perspective for companies and enforcing bodies.

Producer responsibility for packaging implies the principle that manufacturers pay the Packaging Waste Fund (Afvalfonds Verpakking) for the packaging marketed by them. Under this principle, according to the Transition Team, the Waste Fund should not only have to compensate municipalities for household packaging waste; similar compensation should be given to other parties disposing of comparable packaging waste, such as companies in the office, retail, and services sector, schools, sports clubs et cetera. For that reason, the Transition Team advocates further agreements in this field, to ensure that more (commercial) packaging waste will be separated more efficiently and better, to boost the cost efficiency of its collection and recycling.

## UNIVOCAL COMMUNICATION TO CONSUMERS AND CONSUMER BEHAVIOUR

The fact that many short-cycle products are not collected and eventually end up on the streets remains a source of concern in the Netherlands. Products such as tins, bottles, and the like contribute to litter and reduce the liveability of our country. Nations such as Sweden and Norway have tackled this problem effectively through a deposit scheme. Despite all the debates in the Netherlands, it would be advisable to reopen the discussion on introducing a deposit system and other financial arrangements that could effectively support logistics return systems. Not just to boost circularity, but especially to prevent litter. The use of new sensor and track-and-trace technologies could minimise the costs of such a return system. Cf. a recent study conducted by CE Delft.<sup>15</sup>

Effectively influencing consumer behaviour calls for the introduction of more univocal collection systems wherever possible, and uniform communication regarding waste prevention and separation. Municipalities and businesses can start using the newly developed pictograms in the very near future but would be wise to introduce them to their residents by no later than 1 January 2019. Municipalities, companies, material organisations in the fields of, e.g., packaging and appliances, and waste collectors could vastly improve their communication on waste prevention, the use of waste separation, and what goes in which bin once discarded. Rather than the financial arrangements, the content must be leading in this respect. This will produce a more logical collection system, which consequently would be easier to explain. This calls for univocal guidelines throughout the Netherlands regarding what goes in which bin. The parties will implement these agreements on the basis of a collective communication plan, also to be adopted in 2018.

<sup>15</sup> Report entitled *Kosten en effecten van statiegeld op kleine flesjes en blikjes* [Costs and impact of deposits on small bottles and tins], CE Delft, 2017.

Based on the above issues relating to short-cycle products, we propose the following concrete actions with respect to the repurposing stage of products.

**Concrete action 22.** A collective agenda aimed at chain innovation. Within one year, municipalities, manufacturers, and waste collectors will set down agreements regarding a collective agenda. Which steps need to be taken in the chain in order to achieve better recycling results? One simple step involves keeping tabs on raw materials from collected packaging for which there is currently no demand. Can this lack of demand be attributed to their composition? To the collection method? Or to the sorting process? By finding answers to such questions, a collective innovation agenda will evolve.

**Concrete action 23.** More univocal municipal collection logistics. One potential long-term step is the collective adoption of future objective criteria to underpin municipal choices for a flow collection system. Municipalities will have to choose between, e.g., source or subsequent separation, PAYT, or reverse collection. This ties in with the From Waste to Resources programme (VANG), which also enables municipalities to learn from one another. Room for innovation remains important; after all, this is what brought us these systems. In this respect, more attention must be focused on learning from innovation, upscaling when successful, and stopping when apparently not on the right track.

**Concrete action 24.** More effective and efficient commercial waste collection. In 2018, ways to improve the collection of commercial waste in relation to household waste will be explored, in consultation with the waste collectors. The national government will create room for experimentation. The statutory duty to separate waste for companies will be evaluated.

**Concrete action 25.** Improving the quality of plastic packaging waste and compensation for similar waste. With respect to the flow of discarded plastic packaging, parties will agree, within the context of the evaluation of the Packaging Framework Agreement II, on how they will ensure a quality improvement in the plastics to be presented to the sorting and recycling plants. In addition, the parties will set down further agreements aimed at ensuring that more (commercial) packaging waste is separated, collected and recycled more effectively and more cost-efficiently.

**Concrete action 26.** Financial arrangements for effective return systems. Within the context of the circular economy, a collective plan must be developed to widen the scope of return bonus systems and other financial arrangements that can effectively support logistics return systems.

**Concrete action 27.** Univocal communication. Governments and businesses will start using the newly developed pictograms by 1 January 2019. In addition, municipalities, companies, material organisations in the fields of, e.g., packaging and appliances, and waste collectors will set up a collective communications plan, with univocal guidelines for the communication regarding waste prevention, the use of waste separation, and what goes in which bin once discarded.

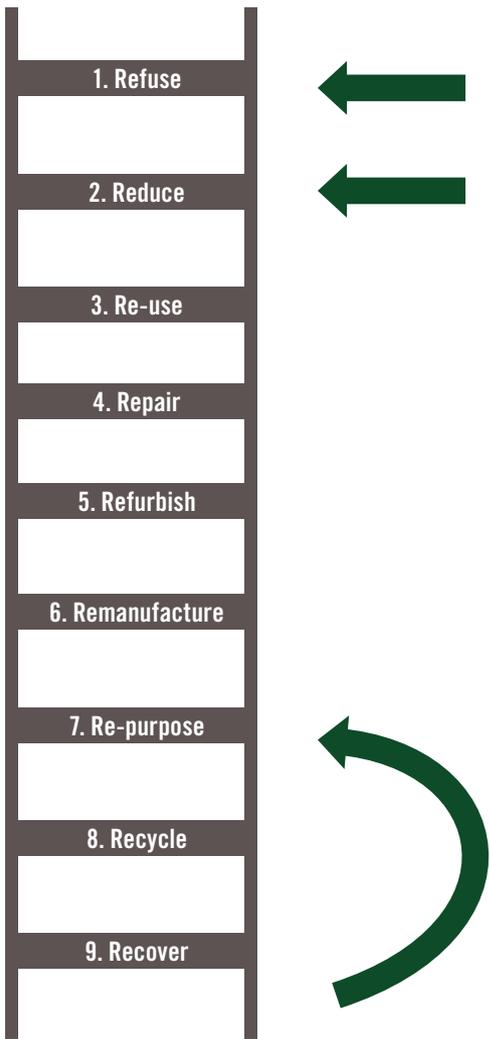
**3.2.4 CONCLUSION REGARDING SHORT-CYCLE PRODUCTS**

With respect to short-cycle products, the strategy adopted by the Consumer Goods Transition Team is characterised by six key elements.

- A focus on cutting down production and the use of these products. Refuse and reduce occupy centre stage in our strategy.
- Extended producer responsibility fosters innovations aimed at reducing less frequent and/or single use, smarter designs, and better recycling.
- Products that are still used, for example, to counteract wastage of food, must be designed in a manner that enables recycling and repurposing, rather than incineration being the only option. The point of departure in this is that products to be used must be composed of recyclable materials to the maximum extent possible. An essential aspect here is the transition to the use of bio-based raw materials (cf. the Transition Agendas for Biomass & Food and Plastics).
- The collection of products that have reached the end of their lives can be organised much more efficiently and effectively. Municipalities can pursue greater univocality in their collection systems. And in the purview of transparent communication to citizens, it would be wise to further coordinate the collection of household commercial waste and indoor/outdoor waste collection.
- The utilisation of the recycled material must be the point of focus, rather than the location at which the products become available.
- The definitions of waste and end-of-waste must be adapted.

**3.3 MEDIUM-CYCLE AND LONG-CYCLE PRODUCTS**

The three stages in the life cycles of medium-cycle and long-cycle products will also be considered from the perspective of the Value Hill model: design and production, retail and use, and repurposing.



### 3.3.1 DESIGN AND PRODUCTION STAGE

Products that are used for longer periods of time must be designed in a manner that retains them as high as possible on the R ladder for as long as possible. Ergo, they must be designed in a repairable and refurbishable manner; wherever possible, they must be stripped of toxic substances that preclude reuse in a subsequent cycle. Easy disassembly, lego-isation (the use of modular standard products), and design for recycling ensure that products can be reused longer and more easily, and that they can be utilised for refurbishment after use and reuse. Making this financially attractive to companies requires other market incentives. For example, if a company is paid for the use of its products rather than selling them, it will be induced to design products that last longer and repair well. With respect to repairs, it is important to factor in the statutory liability of manufacturers. If products are repaired within the applicable period of statutory liability, such repair must be carried out by a party authorised to do so. To make this possible, we need to develop more expertise on circular design, and be able to support companies with expertise on business and revenue models. A specific point for attention in this respect is compiling a list of current initiatives and existing expertise. A great deal is already available through the [circulairondernemen.nl](http://circulairondernemen.nl) website. This initiative must be expanded in the years ahead.

Accomplishing the above goal calls for additional investments in infrastructure in the years ahead, such as, e.g., setting up a knowledge platform. Furthermore, the current European strategy (including the “Eco Design Working Plan” and the “CEN CENELEC standardisation procedure for material efficiency in the Ecodesign Directive” will need to be implemented more stringently. The infrastructure must be geared to both design and business models, and to the stage following the use of products and services. Explicit attention must also be paid to the topic of “transition as a process”. By adopting circular business models, companies will influence their customers. This could subsequently boost the circular demand. Companies thus also play a market-activating role, which is nicely demonstrated by the [loopedgoods.com](http://loopedgoods.com) circular web shop. The Transition Team proposes that the range of parties already active in this field in the Netherlands join forces and collectively assist practical initiatives in implementing circular innovations, also from a market activation point of view.

The Transition Team thus ties in with the aim set down in the coalition agreement to place additional emphasis on the development and dissemination of knowledge and best practices for the circular economy. A key way to achieve this is by collectively supporting a number of major projects, such as the iconic projects set up under the Transition Agendas, with expertise and insights. The proposal is to link up with the development of several initiatives that have been or are being launched, such as CIRCO, the Lectorenplatform Circulaire Economie, Nederland Circulair!, and BOOST CE.

#### **FOR PRODUCTS WITH A MEDIUM TO LONG LIFE CYCLE, WE PROPOSE THE FOLLOWING CONCRETE ACTION IN THE DESIGN AND PRODUCTION STAGE:**

**Concrete action 28.** The knowledge platform for circular design and circular business models must be expanded and strengthened. In the Netherlands, the existing CIRCO programme set up by CLICKNL, the Nederland Circulair! programme, research institute TNO, and several other parties provide the basis for a sound knowledge platform. This can be developed further and rolled out on an international scale. Important items in respect of further development are: a flexible network organisation; gaining more in-depth knowledge; developing the set of instruments; collaboration with financial institutions; developing new curricula for secondary vocational training, professional higher education, and academic higher education; and investments by the retail sector and manufacturers. A first step would be a consultative meeting involving Rijkswaterstaat, CLICKNL, Lectorenplatform Circulaire Economie, Nederland Circulair!, TNO, and a range of companies and government authorities to sketch the outlines of such a platform. This may be undertaken, for example, within the framework of the evolving BOOST CE programme, in which the elaboration of this plan is already a few steps ahead.

### 3.3.2 RETAIL AND USAGE STAGE

#### **OTHER REVENUE MODELS**

The years ahead will see the introduction of increasingly more innovative revenue models, focused on function, performance, or service rather than ownership. The first matter of importance is the addition and/or retention of value: remaining as high up on the Value Hill scale as possible. Furthermore, products will have a longer life, resulting in a reduction or more efficient use of raw materials. A case in point is the pay-per-lux-model, with which experience has been gained by Philips and the Schiphol Group, which involves the supply of light rather than light bulbs. Another example is Bundles, a company supplying washes rather than washing machines. The Transition Team has found that such revenue models may constitute an important incentive for the design of energy-efficient, long-life products. The examples show that a different, circularity-based management philosophy is feasible and works. However, they also show that within the current legislative and funding structure, securing sufficient funding is rather difficult.

With respect to the usage stage of medium-cycle and long-cycle products, the Transition Team views the changeover to other business and revenue models as essential. According to a study conducted by the Netherlands Environmental Assessment Agency (PBL), however, the environmental benefits are dependent on the operationalisation of the new revenue models. As yet, there is no rule of thumb linking the various applications of such revenue models to the reduction of raw materials and environmental impact. Furthermore, it is not always clear for which products such revenue models work or do not work. Researchers from Radboud University, Copper8, and Circle Economy have already conducted some work in this field, but it would be advisable to conduct further study.

In order to be able to further implement some of the circular revenue models, it is important to gain a picture of the residual value of products. Currently, the lack of a proven residual value means that many products are depreciated to zero. As there is no control over the second-hand market, this situation continues. A better perspective of actual residual values and a departure from residual book value may boost the competitive strength of circular revenue models.

The implementation of some circular revenue models, affording the opportunity to learn crucial lessons, requires financial leeway for experimentation. This must encompass a certain degree of freedom, but some control over the process is essential. A platform as referred to above, see Concrete action 28, could include a taskforce to liberally experiment with the funding of new revenue models.

The Transition Team has found that the above new revenue models do not always fit in with the risk models used by financial institutions or the accounting rules incorporated in private (accounting) standards, legislation, and regulations. It is not just the government that needs to play a role in this area. Non-profit bodies such as the Dutch Accounting Standard Board and the IFRS also play an important part in the drafting of accounting guidelines, for example, pertaining to leases. When new revenue models are put into practice, reporting regulations are frequently found to hamper the process. More specifically, for example, the current lease regulations may impact balance sheet ratios. This makes it particularly difficult for small companies to secure funding, on account of insufficient solvency ratios.

It is important to further map out and adapt such obstacles in legislation, accountancy, and the tax system, and in addition develop frameworks in which reuse and repair are actively included. If such obstacles in regulations are removed, more parties will switch to these revenue models. They will thus create their own incentive to design more efficient and longer-life products. Another important aspect in this is to better substantiate that new revenue models, such as circular lease systems, constitute an incentive for ecodesign and thus result in extended product life.

In collaboration with parties pursuing a circular economy, the Royal Netherlands Institute of Chartered Accountants (NBA) can conduct a study into potential obstacles posed by reporting regulations. It is important to raise such obstacles with bodies such as the IFRS. To this end, it would be useful to compile an English-language publication on circular revenue models in relation to bookkeeping and accountancy regulations.

The government will need to enter into debate with the manufacturers in order to explore how legislation and regulations will have to be amended to remove any hindrance to the circular process. Such a debate can be underpinned by the outcomes of the DNB Sustainability Platform "Obstacles and Incentives" working group, in which the financial sector and stakeholders address this issue in collaboration with the DNB.

## SHARING ECONOMY

Another option, in addition to the development of other revenue models, is optimising possibilities for sharing, in order to expand the sharing economy. The sharing economy is defined as "the phenomenon involving peer-to-peer use of unused consumer goods, for free or at a charge".<sup>18</sup>

Many appliances such as power drills, garden tools, high-pressure cleaners et cetera are only used incidentally by consumers. This category of appliances is now incidentally loaned or rented out to other consumers. This phenomenon can be upscaled further through internet platforms. In addition, shared-use cars can be introduced on a much larger scale. A major scale-up is feasible, especially once car rental companies start embracing the concept of shared-use cars, for example, by encouraging leased car drivers to rent out their car at times it is not used. Finally, shared ownership among consumers, such as is now catching on in the tight urban housing market, should be encouraged and simplified for civic initiatives relating to sustainable energy and collective green spaces. To make this attractive, business models aimed at "collective sharing" could be made more competitive, for example, by putting a higher price tag on ownership, such as substantially raising the fees for parking licenses or additional taxation of scarce materials. However, a great deal of study is still required into factors boosting the competitiveness of such business models, the motives of consumers, and the obstacles posed by current regulations.

<sup>16</sup> PBL, *Van betalen voor bezit, naar betalen voor gebruik [From paying for ownership to paying for use]*, 18 May 2017.

<sup>17</sup> Jonker et al., *'Business modellen voor de circulaire economie [Business models for the circular economy]*, October 2016.

<sup>18</sup> Meelen & Frenken 2014; Frenken et al. 2015.



*Credit: HeelNederlandDeelt*

### **SHARING TOOLS**

Many appliances such as high-pressure cleaners, power drills, and other DIY tools are only used incidentally by consumers. This category of appliances is now incidentally loaned or rented out to other consumers. With respect to this type of consumer goods, the possibilities for sharing could be optimised, in order to expand the sharing economy. In the sharing economy, people allow one another to use their consumer goods when not in use, for free or at a charge. The peer-to-peer sharing of consumer goods should be encouraged and simplified. To make this attractive, business models aimed at “collective sharing” could be made more competitive, for example, by putting a higher price tag on ownership

### A DIFFERENT ROLE FOR CONSUMERS

One of the goals to be achieved with respect to medium-cycle and long-cycle products is that consumers should start regarding the careful use of products and materials as a matter of course, in order to thus make a concrete contribution to the retention of natural capital and to combat climate change. Many such products are still in good shape when consumers tire of them. In such cases, reuse must be encouraged. Products that are still in good shape must be transferred to a new owner rather than be discarded. In part, this can be substantiated by businesses and the government, but in the circular economy consumers themselves also play an active role, for example, as “prosumers”. In several examples, this role is already manifest and successful, but it has only been developed to a limited extent. A nice case in point is the American Quirky platform (see [www.quirky.com](http://www.quirky.com)), that develops products in collaboration with consumers, based on ideas submitted by those consumers. In other cases, 3D printers play a key role, for example, for turning plastic waste into new household products. In the opinion of the Transition Team, the further substantiation of the prosumer role is essential, especially with respect to medium-cycle and long-cycle products.

### OPTIMUM USEFUL LIFE

The extension of useful life is an important element in the circular economy. Consumers are more inclined to have products repaired or refurbished if they are rewarded for doing so, for example, if repair is cheaper than purchasing new products. However, legislation is an important consideration with respect to the extension of useful life. Currently, for some consumer goods, manufacturers are required to provide a free warranty for the duration of their expected useful life. If such useful life is extended, this requirement will automatically follow suit. The desirability of this consequence must be thoroughly reviewed. Ideally, a long warranty serves as an incentive for quality improvement. The product liability act also affects the feasibility of certain matters, such as repairs by non-authorised parties and other activities that extend a product’s useful life, such as refurbishment. These aspects also merit further consideration.

Moreover, the extension of a product’s useful life is not a goal worth pursuing in every case. Particularly with respect to appliances whose impact can largely be attributed to their power consumption, innovation frequently entails that replacement within a certain time frame would be more efficient. This applies especially to, for example, refrigerators. For that reason, we use the concept of “optimum useful life” of appliances when dealing with this category. Furthermore, we aim to combine a product’s actual useful life and its optimum useful life. This is another argument in favour of a focus on circular design (design for recycling), which would make it easier in the future to replace only those components that have been overtaken by technological innovations. On the other hand, in some cases manufacturers still benefit from short life cycles, since this will prompt consumers to purchase new products more rapidly. This calls for counteracting incentives.

Providing transparency can offer a solution in this respect, for example, by expanding the energy label to reflect the developments in the ecodesign directives. Information could be provided on the consumption of raw materials and the expected useful life. As regards electrical appliances, optimum useful life can be determined and extended increasingly better. Efforts to this effect could link up with the on-going “Material efficiency in ecodesign” project, which is developing standards for the sustainable use of materials in products at the behest of the European Commission.

Knowledge regarding useful life and environmental performance must be made available to the public at large, in order to enable consumers to carefully consider the pros and cons. This could be achieved through, for example, a simple app enabling them to find out how products score. In 2018, parties such as the Consumentenbond [Dutch Consumers Organisation], Milieu Centraal [Dutch organisation for environment-related public information], and SMK [Dutch sustainability platform] could develop a plan for such an app which would subsequently be carried out. The existing RecycleManager system could serve as a reference source and point of departure in this respect. This app presents an overview of all the collection stations in the Netherlands and shows exactly which station is closest. Another potential point of departure is the Waste Separation Guide published by Milieu Centraal, which is used by many municipalities. The useful life app could tie in with both. By 2030, it will be common practice for consumers to consider whether repair, refurbishment or (partial) replacement would be the best option for a product, and to know where assistance can be provided. In part, this is the result of the different revenue models that companies will have adopted by 2030, and in part it ensues from the wide public support for the new default as described in the introduction.

### CONSEQUENCES

If a significant proportion of the Netherlands were to convert to circular products and services based on circular revenue models, and start sharing products on a large scale, this would have considerable consequences. Several new revenue models are currently still profitable because the parties operating according to such models are the first and, e.g., also derive some marketing advantage from them. What happens if many other companies were to follow suit? And what if peer-to-peer lending of say, power drills were to take off on a large scale; this would adversely impact the sales of power drills. Will anyone lose out in these options?

With respect to the retail and usage stages of medium-cycle and long-cycle products, we propose the following concrete actions.

**Concrete action 29.** Increase the impact of new business and revenue models. The first steps to be taken in this regard are:

- Identifying success factors of best practices relating to new revenue models, from the perspective of business interests. The success factors must be of an economic, social, and environmental nature.
- Developing rules of thumb for new revenue models. In 2018, rules of thumb and criteria must be developed for revenue models in specific product groups in order to gain a clear picture of which revenue model works best for which product, and which environmental gain is to be made. Such development must comprise a plan of action for the implementation of the revenue models, building on from existing studies conducted by Copper8 and Circle Economy.
- Setting up a taskforce with room to experiment with the funding of new revenue models. Ideally, this taskforce is linked to the expertise centre referred to in paragraph 3.3.1 (concrete action 28) and to an existing or new CE fund in order to be able to complete business cases. Based on the knowledge regarding the funding of new revenue models that has already been developed in collaboration with financial institutions, a fund (such as Invest-NL) could put the experience gained into practice.
- Launching a campaign aimed at the IFRS to incorporate the circular economy into the accountancy regulations; conducting a study into potential obstacles in reporting regulations, in collaboration with the Royal Netherlands Institute of Chartered Accountants (NBA) and other relevant parties. Raise such obstacles with bodies such as the IFRS.
- Examine the impact of the new revenue models.

**Concrete action 30.** Create a living lab, in collaboration with prosumer organisations such as Cooperation of Good and companies aiming to develop innovative circular business models; over a period of two years, this living lab can explore how active consumers can assist in making circular business models profitable.

**Concrete action 31.** Remove obstacles in legislation and regulations. Supplementary to the work done by the Ruimte voor Regels [Room for Regulations] programme and other initiatives, the obstacles must be mapped out and addressed. We challenge the national government, the Royal Netherlands Institute of Chartered Accountants (NBA), and other parties to actively take this up in 2018, together with the Transition Team, and set up tracks focused on a number of specific cases, such as car rental legislation, the accountancy regulations, and the IFRS.

**Concrete action 32.** Make information on the optimum useful life of long-cycle and medium-cycle products available to consumers, including information on how consumers can use this knowledge when selecting products. The proposal is for parties such as the Consumentenbond and Milieu Centraal to take this up collectively, tying in with existing initiatives such as the RecycleManager and the Waste Separation Guide.

**Concrete action 33.** Incorporate a product's useful life and raw material content into its energy label, including the development pertaining to the ecodesign directives.

### 3.3.3 REPURPOSING

The consumer goods that are ultimately discarded must be put to high-grade use for new products. This calls for smart return and collection systems. Pursuing a sustainable raw materials policy must pay off for companies, as does the facilitation of employees and customers in waste prevention and separation. The waste and recycling sector constitutes a vital link between manufacturers and consumers to ensure that discarded products and packaging will no longer need to be incinerated and – if need be, after being processed – can be put to high-grade use. An essential aspect in this is that more knowledge is needed to improve the quality of reclaimed materials, in order to actually retain them in the process in a high-grade manner. Encouraging the exchange of relevant information within the chains would be advisable. Such information could pertain to the component materials of products, or to specific expertise required to enable repair, revision, reuse of components, and recycling of materials. A study into the potential of a materials passport and chain information systems, conducted by RHDHV Engineering, could serve as a point of departure here.<sup>19</sup>

### PROCESSING OF HIGH-GRADE RAW MATERIALS AFTER USE

Once reuse, repair, and refurbishing have extended a product's life for as long as possible, components and/or materials must ultimately be recycled. The Ruimte voor Regels [Room for Regulations] programme can help remove obstacles in legislation and regulations that hamper high-grade processing. An important aspect in this respect is expanding the expertise held by authorities (such as environmental services) regarding options offered by and interpretations of existing regulations that could be conducive to high-grade processing. This could come up, for example, in the assignment of an "end of waste status". In cases in which this does not provide a way out, other instruments must be explored, such as an amendment of legislation and regulations. For example, the maximum waste retention period of three years is hampering the reuse of car components. It is important to examine whether and how the three-year maximum waste matter retention period set down in the "Waste (Landfill Sites and Prohibitions) Decree" can be extended, in case more sustainable and more high-grade processing methods are developed.

<sup>19</sup> Royal Haskoning DHV, "Haalbaarheid Grondstoffenlabel" [Feasibility of Raw Materials Label], 10 June 2014



*Credit: Kiekuniek*

#### **WOOD CHIPS AT A RECYCLING PLANT**

Once reuse, repair, and refurbishing have extended a product's life for as long as possible, components and/or materials must ultimately be recycled. Proper waste separation and collection are vitally important in order to obtain high-quality material flows. The wood chips in the photo are not mixed with plastics or other materials and can be put to high-grade use in, for example, sheet material. The waste and recycling sector constitutes a vital link between manufacturers and consumers. It can ensure that discarded products and materials will no longer need to be incinerated and – if need be, after being processed – can be put to high-grade use.



*Repurposing of products as art*

*Explanation: the consumer goods that are ultimately discarded must be put to high-grade use for new products. Repurposing as art is also an option.*

*Credit: Kiekuniek*

Products such as furniture and clothing are not always properly collected for recycling and often end up in the incinerator, even though the material warrants recycling or high-grade reuse. The Transition Team believes that material suitable for recycling must not be incinerated. This calls for an improvement of the quality of recycled material in combination with the development of markets for secondary products, and for ensuring the supply of sufficient quantities. Secondary raw materials must be priced at a level that enables them to compete with primary raw materials, from an economic point of view. Key instruments are socially responsible procurement by the government and private parties, in combination with the mandatory use of high-quality secondary raw materials. Supplementary options to be considered include financial measures or the introduction of (statutory) control instruments, such as mandatory sorting. This will ensure that materials suitable for recycling do not end up in the incinerator. An important consideration in this respect is that the market for secondary raw materials is becoming increasingly European (single market). For that reason, European-level agreements regarding high-grade recycling are advisable. A topical example is the Dutch Packaging Waste Fund, that has taken the initiative to develop European specifications and measuring methods for the quality of collected packaging material. This contributes to quality assurance and fosters more high-grade recycling.

Raising the quality of secondary raw materials and expanding their markets will reduce the volumes presented for incineration. However, the Transition Team has also come to the conclusion that once ecodesign and design for recycling have become the new default, it will still take a significant amount of time to phase out material that does not qualify for recycling. In the interim period, incineration will continue to feature in the waste processing chain. In this respect, however, it is important to prevent lock-in-situations. After all, it would not make sense to maintain incineration capacity on account of its indispensability for the energy supply or CO<sub>2</sub> production, or on account of financial interests, whereas the supply of non-recyclable waste is insufficient.

In line with the coalition agreement and recommendations by the Netherlands Environmental Assessment Agency PBL, a waste matter tax on incineration and dumping could create the right incentives here. Agreements between the sector, owners, and the government in the context of adapting the capacity and changing the function are also advisable. An additional aspect to be considered is whether the ultimate transformation from incineration to recycling would require a transformation fund to guide the waste sector through this process.

**EXPORT OF USED PRODUCTS**

In the Netherlands, a substantial proportion of the products that are discarded after use, among which are many electronics (in particular, IT products), is collected for the purpose of recycling. In part, this recycling takes place in the Netherlands, but in many cases also in countries outside Europe. On the one hand, this supports the recycling goal, and on the other, it helps bridge the digital gap in, e.g., Africa, where our IT products are reused. Currently, there is no clarity as to the volume of products thus exported; neither is their quality monitored. The data logging requirement under the Waste Shipment Regulation (WSR) only pertains to the export of materials from electronic waste, not to the export of reusable appliances. It is important to monitor both the volume and the quality of appliances thus recycled, in order to prevent the shipment of waste or near waste (appliances that have really reached the end of their useful life). On the positive side, this is already required under the WEEE Directive, which stipulates that upon export, documents must be produced to show that the appliances are indeed still functioning and have been tested. This is to prevent the export of e-waste, under the pretext of reuse, to countries whose recycling standards are lower. Ultimately, however, in these countries such appliances will still end up in the waste stage, in which they are no longer covered by producer responsibility. In the context of a study into the intensification of EPR, therefore, the option could be considered of extending such responsibility to the export of second-hand goods, in order to ensure that these goods are also properly processed and recycled, and that the EPR instrument is also implemented at the international level. To this end, we need to examine the consequences this will have for, e.g., the Basel Convention. In addition, we need to explore whether the customs capacity of developing countries might have to be expanded. This international aspect could also cover the development of decent jobs in developing countries. This element must be addressed at a wider scale in the Netherlands, for example, in interconnection with the Transition Agenda for the Manufacturing Industry.

**SMART RETURN SYSTEMS AND CIRCULAR CRAFT CENTRES**

The question is which return systems fit in with a system in which waste collection is covered by wide(r) producer responsibility. Smart return systems for long-cycle products such as furniture and household appliances may perhaps be structured differently vis-à-vis those in place for short-cycle products such as disposables and packaging. Postal services and parcel delivery services, such as PostNL, Zalando, and DHL, are increasingly interested in picking up products such as small appliances, because drivers frequently head back with an empty vehicle after completion of their deliveries. In addition, the WeCycle producer collection system has launched an initiative to link collection to the moment that an appliance is installed in a home. The customer orders a large appliance, such as a washing machine, either in the store or online. Upon delivery, the delivery driver or fitter not only takes back the old large appliance, but upon the customer's request he will also take other appliances such

<sup>20</sup> PBL (2017) "Fiscale vergroening: Belastingverschuiving van arbeid naar grondstoffen, materialen en afval." [Fiscal greening: tax shift from labour to resources, materials, and waste]

as a hair drier, and old TV, or a toaster. These types of solutions hold opportunities for manufacturers to have their products returned smartly and cost-efficiently. These smart systems will not get off the ground of their own accord. Ergo, it will be necessary to properly map out the various solutions and systems, and to assess their impact. For example, they could be linked to a return bonus for appliances. This return bonus could subsequently be deducted from the delivery fee. Currently, however, the opportunities for smart return logistics are hampered by legislation and “waste” transport permits. The government will have to examine whether the postal and parcel delivery services referred to above could be exempted from statutory administrative obligations. At the same time, it is important to prevent non-competent companies from embarking on activities involving waste matter, especially high-risk waste matter. A question in this regard is whether in some cases, combining waste and product regulations would be more efficient. With respect to other products that cannot just be sent with PostNL and other logistics service providers, it must be made easier for citizens to dispose of discarded goods at a location that guarantees processing at the highest possible rung of the R ladder. To achieve this, municipalities could aim for a spatial planning policy in which various initiatives are situated efficiently vis-à-vis one another. The fact is that circular crafts centres have been found to offer good possibilities and gain increasing acceptance. Take, for example, a location featuring a combination of waste collection facilities, thrift stores, give-away shops, and crafts centres. Such crafts centres are skilled at the repair and refurbishment of products, and at creating new products out of old ones. Cases in point are Repair Cafés and the use of 3D printing. Examples of such centres are the La Poubelle thrift store in Tilburg and the 3D lab in Amsterdam. They attract a wide variety of customers and generate job opportunities, including for people with a labour market disadvantage. Municipalities can play a liaising and facilitating role in the establishment of such initiatives, but manufacturers may also adopt and/or sponsor such circular economy centres. Improving the competitive position of the associated activities requires a reduction of labour costs, combined with an increase in the taxes on the consumption of primary raw materials, especially if their extraction and production carry a higher environmental impact than the use of recycled material. Careful and separate collection of discarded consumer goods must be the social standard by 2030. In line with this, a materials passport must be introduced. An easy scan of collected products will then reveal which components and raw materials they comprise, and what the options for reuse and repurposing are.

With respect to medium-cycle and long-cycle products, we propose the following concrete actions in the repurposing stage of products:

**Concrete action 34.** Push back the incineration of raw materials. The first steps to be taken in this direction are:

- Substantiation of actions to be taken by the government, operators of waste processing plants, and the waste processing industry in order to ensure that with effect from 1 January 2020, material qualifying for recycling will no longer be incinerated.
- Substantiation by the recycling sector, operators of waste processing plants, and the government of a strategy covering the period up to 2030, regarding the adaptation of the capacity of incineration plants, and options for giving such plants another function.

**Concrete action 35.** Monitoring of export, in close collaboration with the Human Environment and Transport Inspectorate (ILT). The Transition Team proposes that several measures in this field be further explored, viz.:

- Introduction of a registration system for the export of products qualifying for reuse.
- Introduction of general quality requirements for products qualifying for reuse and specific quality requirements for products that are exported to non-OECD countries to be reused, in interconnection with the Transition Agenda for the Manufacturing Industry.
- Encouraging exporters to commit to the collection and responsible processing of products marketed by them in non-OECD countries.

**Concrete action 36.** Explore smart return systems. In 2018, manufacturers must, in collaboration with the postal and parcel delivery services, fitters, and other parties, launch an exploratory study into the options for a more efficient return system, using the learning experience gained by several manufacturers and retailers such as Auping, Bol.com, Coolblue, and the LogiCE research programme. The various systems must be intercompared in terms of impact.

**Concrete action 37.** Circular crafts centres must be upscaled and funded. In the short term, three steps must be taken to this end:

1. In 2018, front runners among the municipalities and provinces, manufacturers of consumer goods, the BKN [Dutch sector organisation of recycling plants], and the NVRD [Royal Netherlands Association for Sanitation and Waste Management] must set down and implement an overall plan to this effect. The underlying goal is for all the regions to operate such centres by 2030. To this end, public resources, emanating from the savings on waste processing, among other sources, and private resources (emanating from producer responsibility) will be combined.
2. Reduce pay roll taxes and maintain the low VAT rate on repairs in order to strengthen the circular crafts centres. To elaborate this, the national government must conduct an exploratory study into the impact of such measures, including the options for and pace of their implementation. Such study may be launched by the party responsible for the intervention relating to the financial tools within the Raw Materials Agreement.
3. Explore the concept of a materials passport and chain information systems for consumer goods, in line with the plea for introducing a raw materials passport in the construction sector. In this respect, RHDHV Engineering recommends that this is done within the textiles and electronics sectors.

**Concrete action 38.** Refine separation technologies for various raw materials flows, such as textiles, mattresses and the like. Cf. the iconic project relating to textiles and mattresses set out in Chapter 4. A first step in this process is to explore, in collaboration with various sectors such as the furniture sector, which technologies must be developed further.

**3.3.4 CONCLUSION REGARDING MEDIUM-CYCLE AND LONG-CYCLE PRODUCTS**

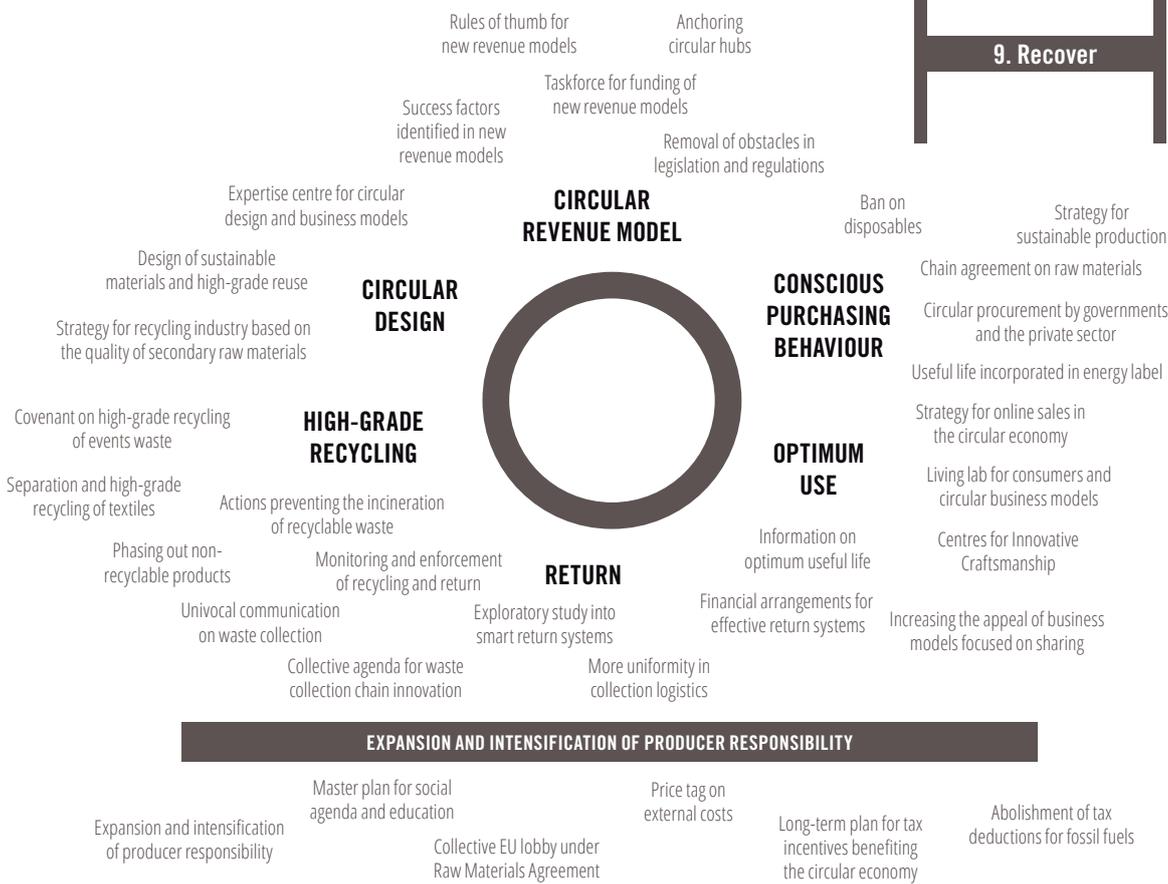
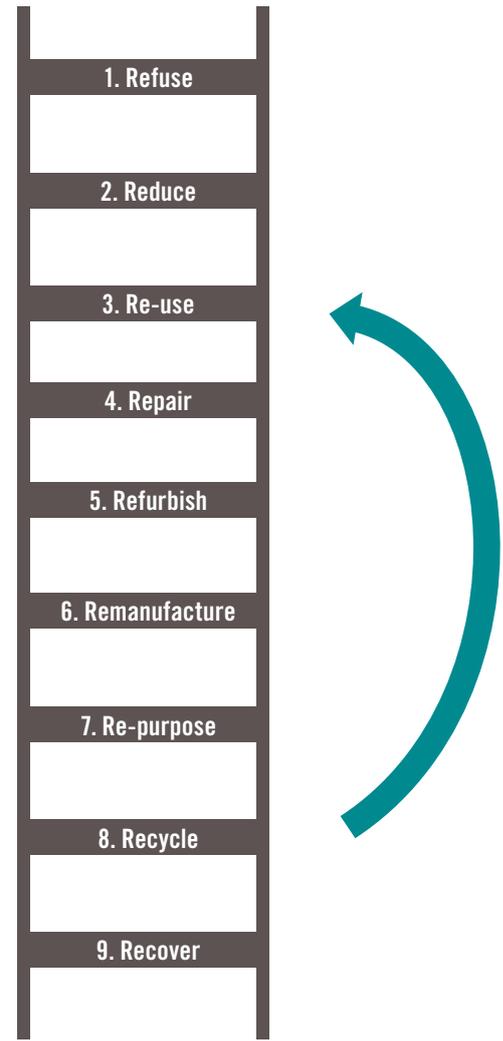
The strategy pursued by the Consumer Goods Transition Team regarding medium-cycle and long-cycle products is characterised by three main elements:

- A focus on business models featuring market incentives for optimum useful life, repair, and keeping products as high up on the R ladder as possible;
- Creating room for experimentation and innovation of financial models in order to upscale and widen the scope of these new business and revenue models;
- Preventing the incineration of recyclable raw materials.

**3.4 INTERCONNECTIVITY, IMPACT, AND ASSESSMENT VIS-À-VIS OBJECTIVES**

**3.4.1 INTERCONNECTIVITY**

This chapter lists 38 actions, ranging from the highly concrete and immediately implementable, to actions that still need to be elaborated in more detail. With this multitude of actions, the Transition Team aims to tackle the various issues pertaining to market incentives that we are currently faced with. A single action or an action addressing one of the wrong incentives does not suffice in this respect. We advocate an “and-and-and-and” strategy. By working on innovations, circular design, strengthening new revenue models, and concurrently working on better waste separation methods and other regulations, the incentives may be directed at prompting organisations to go circular. The diagram below explains the interconnectivity.



### 3.4.2 IMPACT AND ASSESSMENT VIS-À-VIS OBJECTIVES

The impact of the four sub-goals set out in Chapter 2 differs for each life cycle category; each sub-goal generates different actions. The table below outlines the actions and thus provides insight into how each action in essence contributes to the attainment of the sub-goals.

SUB-GOALS	OVERARCHING PRIORITIES	SHORT-CYCLE PRODUCTS	MEDIUM-CYCLE AND LONG-CYCLE PRODUCTS
a. Value creation	<ul style="list-style-type: none"> <li>Strengthening export with a view to the creation of social, ecological, and financial value</li> </ul>	<ul style="list-style-type: none"> <li>Use of recycled and renewable materials</li> </ul>	<ul style="list-style-type: none"> <li>Setting up circular crafts centres</li> </ul>
b. Rethink, refuse, and reduce	<ul style="list-style-type: none"> <li>Development of social price encourages reduction in consumption</li> <li>Expanding public support</li> </ul>	<ul style="list-style-type: none"> <li>Refraining from use</li> <li>Developing alternatives for packaging and disposables</li> </ul>	<ul style="list-style-type: none"> <li>Refraining from the use of medium/long-cycle products that are becoming increasingly short-cycle, such as certain furniture and textiles</li> </ul>
c. Using products as long as, and at as high a grade, as possible	<ul style="list-style-type: none"> <li>Development of social price and financial incentives encourage reuse and repair</li> <li>Development of competencies</li> <li>Mandatory sorting of recyclable waste with preconditions</li> </ul>	<ul style="list-style-type: none"> <li>Design for recycling</li> <li>Ecodesign Directive</li> <li>Dialogue between recycling and manufacturing industries</li> <li>Coordinating collection with recycling industry</li> </ul>	<ul style="list-style-type: none"> <li>Design for repair, re-purposing, upgrading, and recycling</li> <li>Prolonged use through repair</li> <li>Prolonged use through reuse of goods by others (second-hand)</li> <li>Market incentives for the circular economy by introducing other business models</li> <li>Dialogue between recycling and manufacturing industries</li> </ul>
d. Optimum utilisation of functionality			<ul style="list-style-type: none"> <li>Intensification of use through sharing</li> </ul>

### 3.5 CONCRETE ACTIONS AND TIME FRAME

The essence of the Transition Agenda for Consumer Goods is formed by the concrete actions that are to result in a circular economy. These actions differ in terms of nature, impact, and degree of elaboration. In terms of implementation, the actions differ substantially. Some may be implemented right away, others will have to wait for a political choice, consultations within the EU, or new technological developments. The matrix below sets out all the actions, classified according to options in terms of implementation.

CONCRETE ACTIONS	TO BE IMPLEMENTED IMMEDIATELY; TIES IN WITH CURRENT POLICY	POLITICAL CHOICE IN THE NETHERLANDS	INTERNATIONAL COORDINATION	REQUIRES TECHNOLOGICAL DEVELOPMENT
Overarching priorities				
1. Steep price tag on CO2			x	
2. Development of long-term plan for tax incentives		x		
3. Abolishing tax deductions for fossil fuels		x		
4. Promotion of Holland Circular Hotspot	x			
5. Collective EU lobby campaign under Raw Materials Agreement	x			
6. Expansion of EPR to textiles, disposables, and furniture	x		(x)	
7. Intensification of existing EPR	x		(x)	

8. Promotion of circular valleys	x			x
9. Circular procurement in 2020	x			
10. Actions relating to small wins for consumers	x			
11. Master plan for sustainable and circular education: Circular Skills.	x			
12. Developing plan for repurposing of products that do not qualify for high-grade recycling		x	x	
13. Strategy for recycling industry based on quality of secondary raw materials	X			x
14. Developing plan for circularity among online sales points	x			
15. Developing plan for circularity among suppliers	x			
16. Elaboration of sector plans for furniture, electrical appliances, disposables, and textiles	x			
17. Amendment of legislation and regulations		x	x	
Short-cycle products				
18. Use of sustainable materials in the design of short-cycle products	x			x
19. Exploration of effective actions to prevent unnecessary short-cycle products		x		
20. Strategy for sustainable consumption	X			
21. Development of a Green Deal for Waste-free Catering & Festivals 2.0.	x			
22. Collective agenda for waste collection chain innovation	x			
23. More uniformity in waste collection logistics		x		
24. Effective collection of commercial waste		x		
25. Quality improvement of plastic packaging waste				x
26. Financial arrangements for effective return systems		x		
27. Univocal communication on waste collection		x		
Medium-cycle and long-cycle products				
28. Expansion of knowledge platform for circular design and business models	x			
29. Increasing the impact of circular business and revenue models	x			
30. Living lab for “prosumers”	x			
31. Amendment of legislation and regulations to accommodate circular revenue models		x		

32. Development of communication relating to optimum useful life	X			
33. Incorporating useful life in energy labels		X	X	
34. Preventing incineration of materials qualifying for recycling	x			x
35. Monitoring export of used products for reuse outside the EU	x			
36. Exploratory study into smart return systems	x			x
37. Upscaling and funding of circular crafts centres	X			
38. Further development of various waste separation technologies				x
Actions from the social agenda				
Campaigns to get people involved in the circular economy	x			
Development of Circular Skills (see Action Item 11)	x			
Development of best practices relating to social aspects and HRM policy	x			
Explicit inclusion of social aspects in the implementation of iconic projects	x			



Photo: BMV

### **REUSE OF SHEET MATERIAL IN INTERIOR CONSTRUCTION AND THE FURNITURE INDUSTRY**

The Koninklijke CBM (Sector Association for interior construction and the furniture industry) has initiated the development of an overall sector plan for the furniture sector. Its goal for 2030:

- 50% of the old stock of treated and untreated sheet material that is already on the market must be processed, reused, and recycled rather than incinerated.
- 50% of all the new sheet material marketed in the Netherlands must be circular. I.e., designed for reuse, and/or designed using bio-based alternatives.

## CHAPTER 4. SECTOR PLANS AND ICONIC PROJECTS

Chapter 3 links the analysis to an action agenda. Most of the actions are general in nature and applicable to many sectors. In order to be able to set to work shortly, concretely and visibly, the Transition Team proposes that action plans be developed for four chains (see Concrete action 16). A supplementary proposal is to set up an iconic project for each sector, to be developed in 2018. Meanwhile, the initial outlines of several such sector plans have been explored, including an iconic project. The paragraphs below reflect the outlines for the furniture, textiles, electrical appliances, and packaging sectors. Furthermore, the Transition Team presents two additional, iconic umbrella projects: the Sharing Economy and the Proud of the Circular Economy campaigns.

The first three iconic projects and sector plans are

- 4.1 Furniture. Strategy for the sector and iconic project relating to mattresses.
- 4.2 Textiles. Substantiating a circular textiles roadmap, featuring the Circular Textile Valley as an iconic project.
- 4.3 Electrical appliances. Strategy for the sector and “Product-as-a-service” as an iconic project.

These three plans and iconic projects will be briefly explained below.

In addition to the three sector plans including iconic projects, the Transition Team has identified another three iconic projects that tie in with the principles set out in Chapter 2. These three iconic projects are:

- 4.4 “Quality needs work”. An iconic project relating to the quality of secondary raw materials and its impact on collection and processing.
- 4.5 The sharing economy.
- 4.6 “Proud of the Circular Economy” campaign.

All iconic projects involve projects that simultaneously put multiple actions into effect and illustrate multiple principles from Chapter 2. The Transition Team views these iconic projects as driving forces for the realisation of the entire agenda.

### 4.1. FURNITURE

The furniture and interior construction industry represents a sector comprising many small and medium-sized businesses. More than half of the 1450 companies employ between 1 and 5 staff. The sector comprises many small interior constructors and home furniture manufacturers, but also a number of medium-sized and large players as well as several “volume companies” such as IKEA and Beter Bed, that operate independently or fall under large international corporations. A strategy of sufficient scale calls for an integrated approach and collaboration between all the stakeholders. The Koninklijke CBM (Sector Association for interior construction and the furniture industry) has initiated, in consultation with the Transition Team, the development of an overall sector plan for the furniture sector. This plan is briefly discussed below. A more comprehensive version is available.

#### 4.1.1 SECTOR PLAN FOR THE FURNITURE SECTOR

The substantiation of the “Furniture” sector plan involves two major challenges to be addressed separately:

- Old furniture and interiors. Key question: what to do with the old, non-circular furniture stock? In this respect, the focus is on extending its useful life, the second-hand market, and high-grade reuse.
- New furniture and interiors. Key question: how can we guarantee that new furniture and interiors remain reusable? In this respect, the focus is mainly on circular design (design for reuse) and circular production.

These challenges will be fleshed out on the basis of three concrete flows of materials or products, viz., mattresses, sheet material, and plastics. These three flows together constitute the bulk of the material involved in the furniture industry. For each flow, strategies are reviewed pertaining to design and high-grade reuse. The paragraphs below briefly set out the strategies for the three flows.

#### MATTRESSES

Goals for 2030:

- 67% of all the old mattresses already on the market will be dismantled, reused, and recycled in a manner that enables repurposing of the various components, as high up on the R ladder as possible.
- 75% of all new mattresses that are marketed will be circular, designed for reuse.

Every year, 1.2 million mattresses are discarded in the Netherlands. Two-thirds end up at waste collection centres to be incinerated. One-third of the mattresses are cleaned and dismantled in one of two private factories, and subsequently processed into new raw materials that are largely used as filling material or put in storage for the time being. As yet, the parties involved have not managed to develop a successful business model for the annual processing of 1.2 million mattresses; this requires further research.

In collaboration with the main stakeholders in this sector, such as Auping, Hilding Anders, IKEA, and Beter Bed, a plan to attain these two goals is currently being elaborated. In both cases, further research constitutes the first step, because an approach that successfully addresses all the aspects involved has not yet been developed. Such research is required to arrive at design for reuse, with sustainable and bio-based materials, and to enable high-grade reuse.

The proposal is to set up an innovation fund (Matrassen Recycling Nederland) to launch the activities necessary to achieve the two goals. Under this fund, research must be conducted to establish a mattresses roadmap with a focus on the above goals for 2030. This fund can be used to commission external research, develop and collect know-how (including at the international level), and fund all the actions required to attain the goals.

Two steps must be taken to set up such a fund:

- For the short term, an initial government investment is needed to set up and implement the mattresses action agenda. The initial grant is required as an impetus to expedite the recycling of mattresses and give momentum to design for reuse.
- In the longer run, the fund can be given a more permanent character. This requires an assessment of options to secure further financing, aimed at taking additional concrete steps towards the circularisation of the mattress chain. Such options must be explored within the sector.

The proposal involves the multi-year commitment of an interdisciplinary group of scientists to the innovation fund in order to warrant well-substantiated choices. The Groene Brein network will be asked to tackle this.

## SHEET MATERIAL

Goal for 2030:

- 50% of the old stock of treated and untreated sheet material that is already on the market must be processed, reused, and recycled rather than incinerated.
- 50% of all the new sheet material marketed in the Netherlands must be circular. I.e., designed for reuse, and/or designed using bio-based alternatives.

In the Netherlands, every year millions of tonnes of treated and untreated sheet material end up as waste. As yet, a large proportion is not put to high-grade reuse. It is important to distinguish between treated and untreated sheet material. Together with timber and sawing waste (category A timber), a limited volume of untreated sheet material is already processed into new sheets and new wood products. This is a step in the right direction.

The processing of treated sheet material (category B timber) presents a less favourable picture. After use, the bulk of this sheet material is incinerated by waste processing plants or by companies in the sheet material sector operating a sawdust incinerator equipped with the right filters. In many cases, such material is coated or treated with non-biodegradable materials such as HPL, melamine, or non-organic paints, glues, or enamels. This means that every year, millions of square metres of sheet material are not reprocessed into new resources.

Several concrete actions are essential with regard to sheet materials.

- Untreated sheet material
  - To give impetus to the processing of untreated sheet material (category A timber), all the companies active in the sector could join forces and develop an action agenda for the circular production, use, and processing of untreated sheet material.
  - This calls for integral collaboration between manufacturers and suppliers of sheet material, furniture manufacturers, interior constructors, sub-contractors (paints, glues, enamels), waste processing plants, logistics companies, and other stakeholders eager to get this off the ground.
  - Such collaboration must seek to link up with the Forest and Timber Action Plan and the Transition Agenda for Biomass & Food. Setting up a timber chain project would be advisable.
- Treated sheet material
  - Research must be conducted into new processing options for the old stock of treated sheet material (category B timber) that is already on the market.
  - Research must be conducted into the development of new, bio-based alternatives to glues, paints, enamels, and coating of sheet materials (design for re-use).
  - Linking up with the aforementioned circular crafts centres might offer practical opportunities for making new products out of old treated sheet material.



Loof

#### **MATTRESSES DESIGNED FOR REUSE**

Products that are used for longer periods of time must be designed in a manner that retains them as high as possible on the R ladder for as long as possible. Ergo, they must be designed in a repairable and refurbishable manner; wherever possible, they must be stripped of toxic substances that preclude reuse in a subsequent cycle. Easy disassembly, lego-ising (the use of modular standard products), and design for recycling ensure that products can be reused longer and more easily, and that they can be utilised for refurbishment after use and reuse.

All these concrete actions will not get off the ground of their own accord. If they are left up to the private sector alone, the expectation is that the goals for 2030 will not be realised. It is important for the government to provide resources for the development of a sheet material roadmap. This will expedite the implementation of the action agenda to be drawn up for sheet material. .

## PLASTICS IN FURNITURE

In addition to timber and wood products, the production of furniture and interiors also involves the use of materials such as metal, glass, foam, and plastics. Interior constructors use a lot of solid surface material, i.e., plastics such as Corian and HI-MACS. After use, most of the products containing solid surface material are immediately destroyed and incinerated at waste processing plants. This means that raw materials are lost, as initiatives are conceivable for the reprocessing and recycling of such materials to be used in the manufacture of new furniture. Parties involved in such initiatives must collectively develop new business models for the processing of solid surface material and other plastics.

In collaboration with stakeholders, CBM and the Transition Team aim to draw up an action agenda to circularise the use of plastics in furniture and interiors. This also involves two issues to be addressed:

- What do we do with the old plastics that are already on the market?
- What bio-based alternatives are available and how can we employ circular design to boost reuse?

In this action agenda, linkage and collaboration with the Transition Agenda for Plastics is imperative.

### 4.1.2 STRATEGY FOR FURNITURE AND ICONIC PROJECT

Along with the efforts being expended by the many front runners in the furniture sector, the strategy to be adopted with respect to the three flows can boost the circularisation of this sector. An integral approach can be developed with all the stakeholders involved, for both the front end of the chain (design for reuse) and the back end of the chain (the processing of products after use). To effectively pursue the mattress issue, the Transition Team proposes that an iconic project be set up in the years ahead aimed at putting a significant proportion of the discarded mattresses to high-grade use again and at marketing, in collaboration with parties from the sector, new mattresses that warrant easy dismantling and recycling.

## 4.2 TEXTILES

Clothing and textiles are consumer goods that are pre-eminently suited to being tackled in the purview of the circular economy. They present ecological challenges, such as a high environmental burden and substantial wastage in the chain, but conversely also offer economic opportunities such as a lot of expertise, many innovative initiatives, and opportunities to strengthen crafts and historical textiles hubs. And, as fashion innovator Peter Leferink has already stated: fashion is a metaphor for what happens in society and what we can expect for the future.

The Netherlands has a sustainable textiles covenant aimed at the international production chain. It identifies nine aspects relating to sustainable textiles. One of these is the circular economy, which is viewed as the closure of the raw materials chain. The covenant does not rank the nine sustainability issues. The fashion, interior design, carpet, and textiles sectors have initiated the development of a “circular textiles roadmap”. This roadmap helps substantiate the section of the covenant pertaining to raw materials. The roadmap, which has already been completed, is schematised in Figure 5.

The roadmap gives a complete picture of all the aspects involved in the circular textiles chain. It sketches a clear framework for action for the Netherlands as regards closing the loop through innovations in the fields of mechanical and chemical recycling, large-scale collection, and fine-grained sorting and application of recycled fibres in design and production. Most of the concrete actions that are currently underway are restricted to steps by individual problem owners or ad-hoc coalitions.

#### Textile recycling

*Explanation: a large proportion of discarded textiles is collected and sorted. This generates reuse flows that qualify for immediate repurposing at the second-hand market and residual flows that are unsuitable for the second-hand market. Some of these find their way into application as insulation fibres for the automobile industry. The first reuse flows are currently already interesting from a financial point of view; the second flow much less so, particularly on account of a lack of options for the high-grade repurposing of recycled textile fibres as original clothing and textile products.*

*Credit: Frankenhuys-Product*



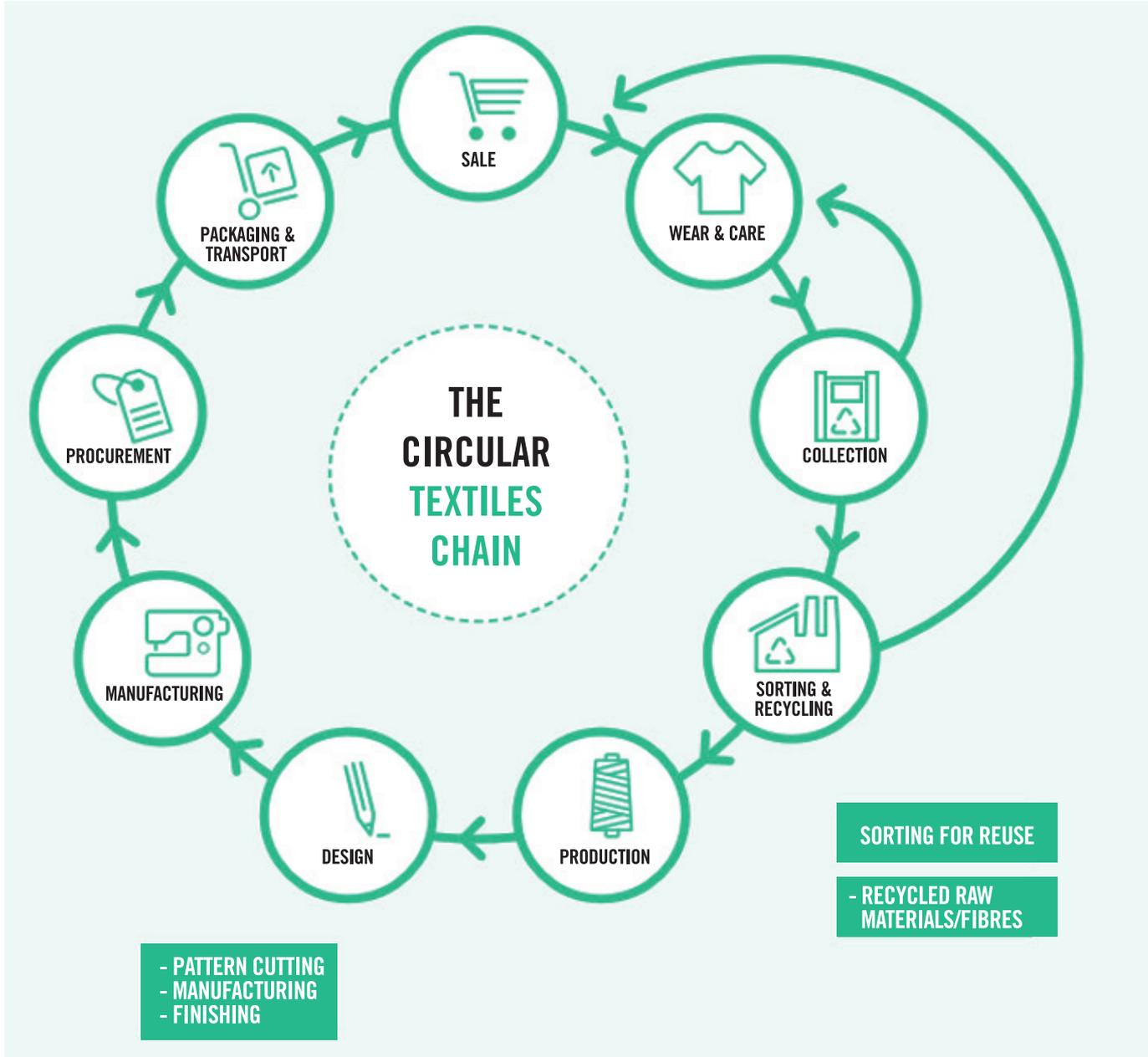


Figure 5. Circular Textiles Roadmap

#### **4.2.1 SECTOR PLAN FOR TEXTILES**

With a view to expediting, more active (co-)control, and facilitation, the Transition Team has taken the initiative, in collaboration with the Modint sector organisation, to actively roll out the roadmap in the form of a sector plan, including concrete actions and an iconic project.

The basic idea is to turn a collection of individual, worthwhile, predominantly small-scale initiatives into a widely supported movement toward the circular economy, in which the circular initiatives gain leverage and larger fashion brands and retailers also join in. Achieving this calls for five short-term steps.

##### **1. EXPANSION AND EMBEDDING OF PUBLIC SUPPORT**

The textiles sector features a circular economy platform in which more than a hundred individuals are active, originating from some fifty organisations, among which are twenty commercial enterprises. The proposal is to expand this platform in a structural manner and embed it in the existing business community, with more meetings, both of a general nature and focused on specific issues, and an online platform function to, e.g., collect best practices, liaise with parties, and build up concrete capacities in the fields of recycling, circular design, production, marketing, and retail.

##### **2. RAISING AWARENESS AMONG CONSUMERS**

Linking up with and learning from initiatives launched elsewhere in Europe would be advisable when it comes to involving consumers in the transition to circular textiles. A fine example is the European Clothing Action Plan (ECAP). In the UK, WRAP has launched the Love Your Clothes campaign. This campaign can easily be copied to the Dutch situation.

##### **3. CONCRETE EFFORTS**

Companies that intend to embark on concrete actions within their own business and environment must be supported by trainings and tailored advice, to be provided by bodies commanding specific expertise regarding the sector, the initiatives, and the options. Attention must specifically be focused on options in terms of product and business design, but also on material properties and toxic substances that may be added to the yarns or as colouring agents. The proposal is to set up, in close collaboration with the CIRCO [Creating business through circular design] project, a sector-specific training programme that addresses design and business models.

##### **4. RECYCLING TECHNOLOGIES**

A large proportion of discarded textiles is collected and sorted. This generates reuse flows that qualify for immediate repurposing at the second-hand market and residual flows that are unsuitable for the second-hand market. Some of these find their way into application as insulation fibres for the automobile industry. The first reuse flows are currently already interesting from a financial point of view; the second flow much less so, particularly on account of a lack of options for the high-grade repurposing of recycled textile fibres as original clothing and textile products. Expanding the potential uses of the residual flow that is unsuitable for the second-hand market requires a technical development of recycling technologies. Cf. Concrete action 38 in Chapter 3. Both the mechanical sorting and fiberisation technologies and the chemical recycling processes need to be improved.

Similar to the design of clothing and textiles, the recycling process must also pay attention to the optimum extraction and phasing out of toxic substances in clothing and textiles.

##### **5. REVENUE MODELS IN FASHION**

The fashion and clothing retail trade is faced with the trend of increasingly rapidly changing collections. The fierce competition between clothing brands means that not a single manufacturer or retailer can individually struggle out of this development. The clothing sector and the government must collectively examine which undesirable incentives promote the continuation of this trend, and explore leads for curbing this fast fashion, without compromising the earning capacity of the fashion and clothing sector. The point of departure in this should be for the supply to be optimally geared to consumers' actual individual requirements (tailored demand), and minimising stocks (just-in-time management). Another issue to be reviewed is whether shops could offer visible return facilities for the repair and production of clothing.

##### **6. EPR FOR CLOTHING AND TEXTILES**

As stated in paragraph 3.1.3, a study is being conducted into whether and how extended producer responsibility for clothing and textiles can foster the realisation of the circular economy. From a system perspective, this study links up with the above ambitions and the iconic project discussed below, in order to circularise the incentives on the clothing and textiles market.

#### 4.2.2 ICONIC PROJECT IN THE TEXTILES SECTOR: DUTCH CIRCULAR TEXTILE VALLEY

The Transition Team and Modint have looked around for an iconic project capable of combining the six steps outlined above. The result: Dutch Circular Textile Valleys.

Several regions in the Netherlands feature both history and prospects related to textiles, fashion, and clothing. Cases in point are Twente, Tilburg, Arnhem, and Amsterdam, each of which is characterised by a specific focus area: high-grade recycling, workwear, design, and business. For example, the Amsterdam Fashion Institute (AMFI) is energetically making a name for itself ([www.amfi.nl](http://www.amfi.nl)), while several parties in the Twente region are working on the development and application of new recycling methods. The idea is to develop these four regions, ambitiously and with a view to high-grade recycling technologies, into Circular Textile Valleys in which existing and new companies, research institutes, and regional governments will collectively focus on the recycling and production of circular textiles. The Transition Team and Modint propose launching the first such valley in Twente, by setting up an initial development and pilot production capacity that designers and brands (manufacturers) may use for the circular design and production of pilot fashion and workwear collections (B2B).

The Twente valley could be composed of the following steps and components:

##### 1. DEVELOPMENT OF PILOT AND PRODUCTION CAPACITIES FOR HIGH-GRADE RECYCLING

Create pilot and production capacity that commands all the high-tech expertise currently available, with a view to creating new fibres out of discarded clothing that is unfit for the second-hand market. Relevant technologies are high-grade mechanical fiberisation and the SaXcell chemical recycling process. Both technologies must be used in the pilot, in order to convert old textiles into high-grade secondary fibres. This pilot factory must operate at pilot capacity in the development of such fibres.

##### 2. PILOT PRODUCTIONS USING RECYCLED FIBRES

Use the recycled secondary fibres in new clothing and textiles, in collaboration with mainstream parties from the world of fashion, workwear, textiles, and soft furnishings; for example, a party that also focuses on fast fashion. Involve several of the pioneering parties already working on a circular fashion chain in this effort, such as MUD Jeans, Blue Loop, Brightloops, AMFI, Re-Blend, Strawberry Earth, and many other, including workwear companies. Develop new (corporate) fashion and textiles items. This process must also address the marketing side and, logically, the circular business model. This means that the pilot must cover the entire process of manufacturing clothing and textiles, from the development of fibres to manufacturing yarns, design, and weaving or knitting the fabric.

##### 3. FURTHER DEVELOPMENT OF THE PILOTS

Various options exist as regards further development. The fibres obtained can be used at a wider scale for the manufacture of clothing and textiles in the Netherlands (reshoring). However, considering the sector's scale, its markets, and the limited capacity in the Netherlands, knowledge export to mainstream production countries, particularly in Asia, will be required for the upscaling of circular textiles. This can be achieved by exporting fibres from the mountain of Dutch clothing and textiles waste to other parts of the world as secondary fibres, to be used for the manufacture of new textiles. Another way is to sell recycling technologies developed here to international textile manufacturers, prompted by a growing demand for textiles containing recycled fibres. The balance in this is highly dependent on market choices. In this third stage of the iconic project, attention must also be paid to the safeguarding of the recycled content in textiles, through a reliable track-and-trace system. The Dutch ReMo initiative has developed an effective system to this end that, in addition to the percentage of recycled fibres, also calculates the environmental gains (climate, energy, and water) using the Modint EcoTool. Especially in the pilot production stage, such a system will be of important relevance to start-ups, mainstream workwear and clothing companies, and retailers embarking on new, circular avenues, to substantiate circular assertions towards consumers and institutional buyers.

##### 4. DEVELOPMENT OF CIRCULAR CRAFT AND MANUFACTURING INDUSTRY IN CLOTHING AND TEXTILES

Expertise regarding textile manufacturing technologies, such as weaving and knitting, has diminished. Several essential preconditions must be established in order to ultimately grow towards four Circular Textile Valleys in which the regional textiles hotspots are interconnected:

- Creating new employment opportunities, if possible, linked to circular manufacturing industry centres;
- (Re)developing expertise and skills relating to textiles and clothing manufacture, at vocational secondary education and professional higher education levels;
- Foster innovation by linking common manufacturing processes to modern technologies, such as digital clothing patterns or supporting processes with new robot technologies.

This iconic project is intended to generate the following results:

- the further development of high-grade recycling methods for textiles;
- new lines in the (corporate) fashion industry, featuring high-grade textiles based on secondary raw materials: upcycling concretised;
- collaboration between start-ups and mainstream parties;
- new business models;
- the further development of textiles (recycling) activities and the crafts and manufacturing industries, thus creating job opportunities in the four Circular Textile Valleys in the Netherlands;
- innovative technologies and strategies that could be marketed abroad.

#### 4.3 ELECTRICAL APPLIANCES: FROM OWNERSHIP TO (SHARED) USE

Chapter 3 outlines a range of measures aimed at electrical appliances. On the one hand, such measures address the front end of the chain, viz. design and use. How can electrical appliances be designed in a manner that ensures a long life and facilitates high-grade repurposing after their optimum useful life? And how can businesses structure their incentives in a manner that renders an optimum useful life interesting from a financial point of view as well? On the other hand, the measures address the back end of the chain. What is left to do with the materials after use? And how can we ensure an optimum collection?

This sector plan addresses both the front end and the back end of the chain. With respect to the front end of the chain, the proposal is to set up an iconic project focusing on products-as-a-service and sub-concepts. For the back end of the chain, the idea is to link up with existing initiatives.

##### 4.3.1. REINFORCING THE FRONT END OF THE CHAIN: THE PRODUCT-AS-A-SERVICE ICONIC PROJECT

The Transition Agenda leans heavily on new business and revenue models, such as the product-as-a-service model. The product-as-a-service concept involves consumers paying for their use of a product rather than owning it. In theory, it is even possible that the energy bill for appliances is no longer footed by their users. This generates a model holding an incentive for manufacturers to pursue an optimum useful life and low energy consumption. To the Transition Team, this reduction in the consumption of raw materials and CO2 emissions is the express goal in implementing the product-as-a-service-model.

The product-as-a-service idea still involves a great many uncertainties and questions; furthermore, its implementation is hampered by legislation. Currently, all such issues are addressed separately. In addition, the number of good practices based on this model is still limited, while a substantial scale is quite difficult to create at short notice. According to the Consumer Goods Transition Team, rapidly upscaling the new business and revenue models is essential if we wish to attain the goals set out in the Raw Materials Agreement. An ideal means to this end is setting up large-scale pilots. Our proposal is to launch a pilot in the Netherlands in collaboration with housing corporations, manufacturers and suppliers of electrical appliances, and municipalities. Within this pilot, the required studies and legislative issues will be tackled speedily in order to enable consumers, the government, the business community, and the science sector to join forces in a single coordinated action. In addition, the pilot serves to create visibility and thus illustrate the new default.

##### BOTTOM-UP DEVELOPMENT OF OVERALL CONCEPT

To hold appeal for consumers, a product-as-a-service must not only be sustainable, but also improve their quality of life. This concept does so by removing consumers' responsibility for appliances, thus providing security and taking away anxiety. Moreover, sub-concepts may enhance the community spirit in a neighbourhood. This requires, however, that the right services are provided in the right manner. For that reason, the Transition Team is considering a bottom-up approach to the participation of residents, in which community building and the problems and wishes of the residents constitute the point of departure. Residents themselves inventory their needs and determine what solutions are suitable. They develop an overall concept for the neighbourhood, aimed at pushing back the consumption of resources and energy, and improving the quality of life and the community.

Together with housing corporations and the municipality, residents will draw up a list of the products they currently own and use. This list will serve as the basis for attracting appropriate suppliers of electrical appliances and for collectively drawing up a menu offering a choice of appliances, such as built-in kitchen appliances. A single contact person will be appointed, and a single contract will be drawn up for all the appliances offered through this model. An all-in house could even be developed for which the rent would include both electrical appliances and energy consumption. The menu will also feature sub-concepts, such as a common basement with washing machines, a shed with shared-use tools, or parking facilities for shared-use cars and bicycles. Initiatives such as a repair café, a toy library, a give-away store, or a collection centre for small electrical appliances could also be incorporated, as could training courses, study programmes, and work placements. An overall neighbourhood concept will thus be developed that is of benefit not just for the consumption of resources and energy, but also in terms of cost savings, community building, inclusion, and social participation of local residents. Furthermore, a collection facility would help participating manufacturers to attain their collection targets.

The overall concept, including the menu, must be explored and developed collectively in a pre-competitive setting. The ultimate commissions by the housing corporation can be substantiated in a regular tender procedure.

<sup>21</sup> See, for example: [www.sdinet.org](http://www.sdinet.org). SDI (Slum Dwellers International) has been employing a successful bottom-up method for data collection, community building, and neighbourhood upgrading for years.

Several points of attention need to be addressed in this process:

- **Scale.** Achieving scale quickly calls for imposition by the government. Such imposition may be effected at natural moments; for example, following a decision to ban natural gas in a neighbourhood or when large-scale renovation or construction is required for other reasons.
- **Funding.** Funding can currently be secured for smaller pilots, but not for upscaling to two thousand households or more. In many cases, financial institutions appear to turn down circular business models on account of the risks that are difficult to assess, but also because they are accustomed to fund purchase contracts rather than usage contracts. The main bottleneck involves questions pertaining to ownership and liability. Several solutions are feasible in this respect. A government guarantee fund could probably help expedite funding. SDE++ circularity could be incorporated into energy transition subsidies. A revolving fund could be set up, or the chain could set up a cooperative to assume ownership of the products. Financial risks, finally, could be vested there where the costs are lowest, by mapping out the financial chain. The extent to which such solutions will work must be explored during the implementation of the iconic project.
- **Residual value.** The process also involves some bookkeeping hurdles, such as the requirement of depreciation to zero unless residual value can be proven. This can be addressed by a materials bank or market place tracker to demonstrate residual value.
- **Research.** Questions pertaining to rules of thumb for environmental gains, lease legislation, accountancy regulations and the like must be addressed in this pilot. In addition, information must be gathered on existing successful cases, but especially also on non-successful cases. The proposal is to lodge such questions with the knowledge platform that is still under development, or with the BOOST CE programme. A first step in this is amassing all the relevant research questions.

#### **4.3.2. REINFORCING THE BACK END OF THE CHAIN**

The collection of electrical appliances is currently covered by several covenants, such as the existing EPR relating to the product groups in the electrical appliances sector, and the WeCycle collection programme. In many cases, such agreements result in high-grade recycling; a case in point is the Coolrec recycling network. The proposal is to draw up a strategy for the next stage of electrical appliances in the circular economy, with attention to intensification of EPR. This strategy can be developed in collaboration with parties from the so-called monitoring council (representatives from covenant parties, municipalities, NVRD [Royal Netherlands Association for Sanitation and Waste Management], and so on).

#### **4.4 ICONIC PROJECT: QUALITY NEEDS WORK!**

Test centre for the innovation of recycled plastics.

##### **4.4.1. BACKGROUND**

The Transition Team has adopted several principles for this Agenda, one of which is the switch from a focus on quantity to a focus on quality. This means that the quality of waste collection and processing will be monitored, in order to generate high-grade secondary raw materials of consistent quality, a quality enabling the use of raw materials for the manufacture of new consumer goods. Achieving this goal requires a substantial change in mindset, because in current collection processes the focus is almost entirely on quantity, at the national level but also at the regional and local levels.

Obviously, the switch from quantity to quality applies for all waste flows, but in the short term particular priority must be given to the processing of plastic packaging and short-cycle products.

##### **THE CHALLENGE**

The use of recycled content in plastic products entails quite a few obstacles. There is a gap between the supply of resources and the use of recyclates. On the demand side, the feasibility of specifications for plastics of recycled origin is not always clear. On the supply side, recyclers are concurrently expending their best efforts to reprocess the material to a quality suitable for the market, without exactly knowing the requirements of such private parties. In terms of quality, there is still considerable room for improvement as regards the use of post-consumer plastic packaging waste. Current improvement processes aimed at matching supply and demand are progressing slowly, because the technologies for reprocessing to recyclates with a pan-European market potential are spread across multiple suppliers. Action must be taken in this respect.

##### **A UNIQUE TEST CENTRE FOR QUALITY**

Private parties believe that as regards recycled content, supply and demand can be matched more easily if the innovation of reprocessing technologies could be expedited. Not so much with a view to developing new technologies, but rather to combine existing technologies from several manufacturers on a representative practical scale in a manner that enables the rapid assembly of a process that can convert an existing plastic fraction into a recyclate for which there is a demand on the market. There is no such facility anywhere in Europe, which is why the Netherlands holds the potential of becoming a broker in recycled plastics. The ensuing standards could become standards for an international market.

### THE RESULT

A test centre commanding the above capacities will produce the following results:

- supply and demand will be matched more rapidly;
- environmental benefits of entire recycling processes can be optimised;
- the quality of recyclates will be improved, thus adding value and expanding potential uses;
- the aim of standardisation and certification of certain recycle quality will be based on actual business cases rather than remain a theoretical exercise;
- the differentiation in Waste Fund rates can be geared increasingly better to the market prices of recyclates.

### INVESTMENTS

The Transition Team estimates that a well-equipped facility in the Netherlands would require an investment of some four million euros.



*Credit: Omrin*

*Quality improvement in the collection, sorting, and recycling of waste.*

*More emphasis must be placed on quality in the collection, sorting, and recycling of waste. This will enable the generation of high-grade secondary raw materials of consistent quality, a quality enabling the use of raw materials for the manufacture of new consumer goods. Achieving this goal requires a substantial change in mindset, because in current collection processes the focus is almost entirely on quantity, at the national level but also at the regional and local levels. Obviously, the switch from quantity to quality applies for all waste flows, but in the short term particular priority must be given to the processing of plastic packaging and short-cycle products.*

## 4.5 ICONIC PROJECT: THE SHARING ECONOMY

### 4.5.1. BACKGROUND

The sharing economy is an essential element in bringing about a circular economy, especially in order to enable an optimum use of products. In the Transition Agenda for Consumer Goods, this central idea is reflected in both the principles and objectives, and in the concrete actions. To substantiate it, the Transition Team proposes to develop an iconic project based on existing initiatives relating to the sharing economy. In this respect, the sharing economy is defined as “the phenomenon involving peer-to-peer use of unused consumer goods, for free or at a charge”. It revolves around the sharing of products, resulting in more efficient utilisation. In principle, this works for all the stakeholders within a municipality: obviously, from consumer to consumer, but schools may also start sharing goods amongst themselves, a school may share with a library, or a sports club with a swimming pool.

In this iconic project, we aim to build on four aspects that have evolved in the Netherlands in recent years in relation to the sharing economy.

#### 1. PLATFORM

The Netherlands currently accommodates several platforms active in the field of the sharing economy. Peerby and Croqqr enable consumer-to-consumer sharing of products and odd jobs, from a lawn-mower or leaf-blower to painting and gardening jobs. Another example is Snappcar, enabling consumers to borrow a car from another consumer. A general sharing platform in which several online platforms meet, and which combines all forms of sharing, is that operated by the HeelNederlandDeelt foundation. All the stakeholders in a municipality, from schools, local authorities, sports clubs, and consumers to entrepreneurs and civic initiatives, can participate at the local level and in several sectors.

#### 2. PHYSICAL LOCATION

In addition to platforms, goods can also be shared at physical locations. Examples range from sharing board games at a playground in Rotterdam to a library enabling its readers to share more than just books. Another example is a local thrift store setting up a section for the purpose of sharing goods.

#### 3. COMMUNITY MANAGERS

At various locations in the Netherlands, community managers are substantiating the sharing economy at the municipal level under the HeelNederlandDeelt flag. The community managers serve as liaisons between individual residents and initiatives, and they organise various activities such as workshops and presentations aimed at promoting the sharing economy.

#### 4. SPATIAL PLANNING

Spatial planning offers interesting options for expanding the sharing economy. One of the considerations in the construction of new residential areas is the parking availability ratio. For example, this could include the stipulation that 25% of the parking spaces are intended for shared-use cars. Or construction projects could include common areas in which the sharing economy is substantiated. This would have the added advantage of boosting social cohesion in a neighbourhood.

### 4.5.2. ICONIC PROJECT

This iconic project is intended to reinforce a local sharing economy through the digital sharing market place of HeelNederlandDeelt, enabling individuals, businesses, and NGOs to simply share products and services. The idea behind this iconic project is to combine the four elements outlined above into a robust strategy for municipalities, cities, or villages.

#### EXAMPLE AT THE MUNICIPAL LEVEL

The iconic project could be set up as follows. Tilburg (or another municipality) designates a number of locations as physical sharing locations. These must comprise both existing locations and locations yet to be constructed. An existing location could, for example, be La Poubelle in Tilburg. A community manager is appointed for these locations who brings the local sharing economy into blossom and concurrently fulfils a social function. This approach is supported by setting up a highly active online community in this municipality through HeelNederlandDeelt.nl/TilburgDeelt, in a collective approach with potential other existing platforms. This will generate an area in which the physical location, spatial planning, a community manager, and the online platform reinforce one another. The Transition Team proposes to draw up a plan in 2018, in collaboration with a minimum of three municipalities, for a municipal approach to the sharing economy, incorporating the four elements.<sup>22</sup>

<sup>22</sup> Meelen and Frenken 2014; Frenken e.a. 2015. [Geen voetnootaanleiding in tekst]



Credit: Kiekuniek

### THE SHARING ECONOMY

In addition to platforms, goods can also be shared at physical locations. Examples range from sharing board games at a playground in Rotterdam to a library enabling its readers to share more than just books. Another example is a local thrift store setting up a section for the purpose of sharing goods, such as books.

#### 4.6 ICONIC PROJECT: COLLECTIVELY PROUD OF SUCCESSFUL EFFORTS

In the transition towards a circular economy that we are going through, some efforts are bearing fruit, while others are failing. The failures appear to hit the limelight more rapidly than the successes. On the one hand, because of a certain measure of scepticism, but on the other, because there is no targeted approach to efficiently calling public attention to the efforts being undertaken. We intend to change this, with the aim of creating recognisability and thus showing how many parties are taking steps towards the circular economy. This will get people to join in.

##### 4.6.1. ICONIC PROJECT: THE CIRCULAR MOVEMENT

Virtually all the parties engaged in the transition towards a circular economy have examples of what they are undertaking to reach this goal. Landal GreenParks is introducing increasingly more waste separation in their parks. The NS [Dutch Railways] is making cups out of the plastic waste they collect. Planq is turning discarded materials into new tables and chairs. The Municipality of Amsterdam is supporting a project involving the manufacture of soap out of coffee grounds. The members of the NVRD [Royal Netherlands Association for Sanitation and Waste Management] are contracting out increasingly more circular products, such as wheelie bins.

A problem, however, is that these types of initiatives are launched independently from one another, and that they are not always manifested as circular ideas. That is why the circular movement intends to introduce a common denominator under which such products can be launched clearly and distinctly as circular initiatives. This will challenge other parties to join in and give those who are not actively committed to this topic a clear picture of the huge range of efforts that is already underway.

Goal:

- Sharing examples;
- Raising awareness among the population;
- Removing scepticism among the population;
- Inspiring businesses and individuals to join the circular movement.

Actions:

1. Drawing up a list of circular initiatives and exploring how each party can assist in the campaign. A circular NS train? A spectacular campaign by all waste collectors in the Netherlands? A circular economy week in Albert Heijn supermarkets or Landal leisure parks?
2. Developing a recognisable logo to be used by all the businesses, institutions, and sectors on communications relating to their initiatives.
3. Drawing up criteria to be met by the parties, based on the guiding principles. This will enable the parties to show and prove to their consumers that they meet such criteria.

In order to implement these actions swiftly and adequately, we propose to link up with an existing platform that has already taken steps in this direction. In concrete terms, the proposal is to develop this circular campaign in collaboration with Nederland Circulair! and link up with the <http://circularondernemen.nl> online platform.

“You cannot be successful, nor call yourself successful, in a society that fails.” - Feike Sijbesma, CEO, Royal DSM



*Landal GreenParks*

**SUSTAINABLY PLANNED HOLIDAY PARKS THROUGH SUCCESSFUL COLLABORATION WITHIN THE LEISURE CHAIN BY LANDAL GREENPARKS AND RENEWI**

With nearly 13,000 holiday homes spread across more than 75 parks, Landal GreenParks virtually qualifies as a small city. In collaboration with waste service provider Renewi, formerly Van Gansewinkel, the leisure chain is working on reducing the use of raw materials in their parks. Measures such as the acquisition of high-quality, long-life furniture that is easy to repair are pushing back the consumption of raw materials and enhancing the quality of holiday-makers' perceptions.

## CHAPTER 5. IMPACT OF THE ACTION AGENDA

All the activities outlined above will create opportunities for more business, more jobs, and concurrently less wastage of resources and a better environment. However, certain parties, such as employees within a company, will justifiably have doubts about the impact of such activities on their company, organisation, or job. What does a world without waste incineration mean for waste processing plants, organisations that in recent decades have made significant investments in both incinerators with energy recovery and the training of their staff? What about a world in which manufacturers make money providing services rather than by manufacturing and selling increasingly more products? What about a world in which mechanical recycling currently, perhaps, still prevails, but in which the focus will increasingly be on a more high-grade reuse of products? What skills does that require from workers, but also from managers? What about a world in which companies will increasingly need to collaborate rather than compete, in order to survive at the national and international levels? What, finally, does that require in terms of staff skills and leadership within the company? Many questions that have not even begun to be answered within the Transition Team, but that we do need to address. Because the answers may have a significant impact on the action, knowledge, investment, and social agendas.

### 5.1 KNOWLEDGE AGENDA

#### 5.1.1 FRAMEWORK FOR THE KNOWLEDGE AGENDA AND LINKAGE WITH EXISTING AGENDAS

The Knowledge Agenda for Consumer Goods is underpinned by the Dutch National Science Agenda, the Government-wide Programme for a Circular Economy, and the Knowledge Agenda for the Circular Economy drawn up by Het Groene Brein. The core of these three agendas is formed by the domains in which knowledge needs to be developed, and additionally by the different stages of the transition.

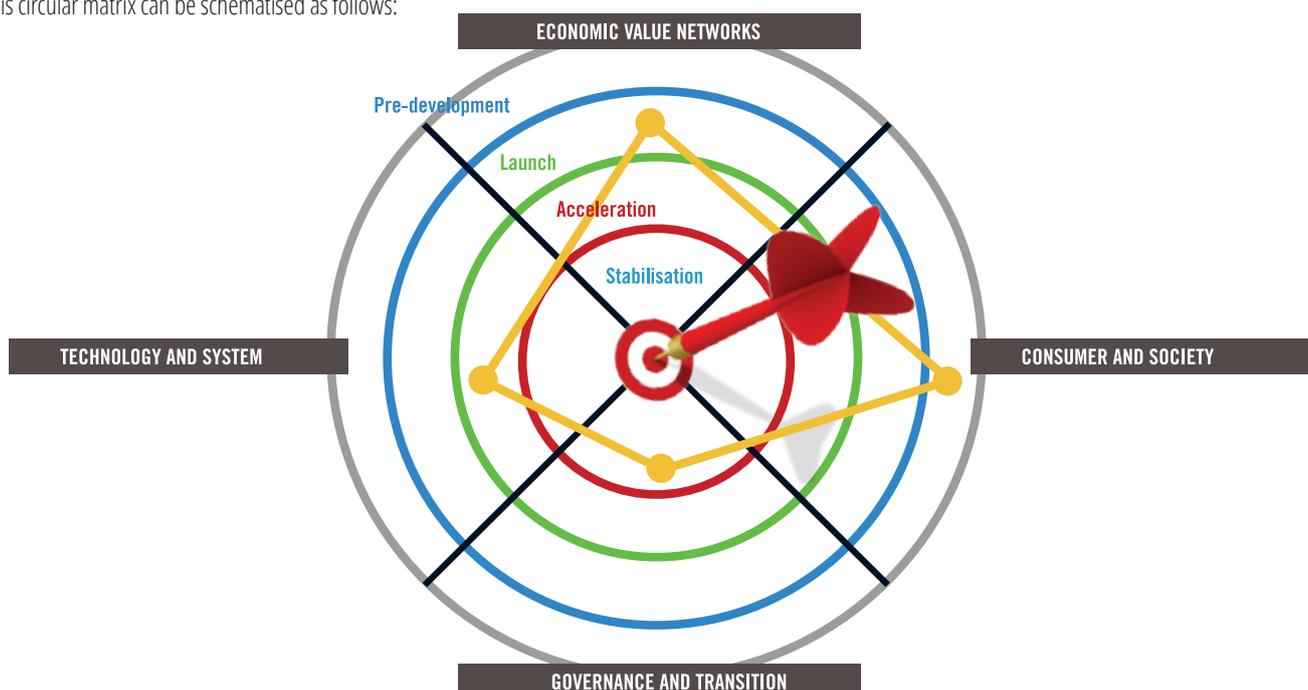
Four stages can be distinguished in a transition:

1. Pre-development;
2. Launch;
3. Acceleration;
4. Stabilisation.

The knowledge issues in each domain differ from one transition stage to the next. In this respect, the domains have been formulated as:

1. Consumer and society;
2. Technology and system;
3. Economic value networks;
4. Governance and transition.

This circular matrix can be schematised as follows:



Supplementary to this structure, a distinction in terms of the duration and dynamics of the research to be conducted is also relevant. Some questions call for short-term studies: within three to six months, knowledge from fundamental research can be applied in actual practice, and existing knowledge can be bundled in order to gain new insights. Other questions require long-term research. In many cases, such a distinction is not made, yet it is essential in the purview of expediting innovation.

### **5.1.2 SECURING KNOWLEDGE**

An extremely great deal of knowledge is being developed in the field of the circular economy. Studies cover a wide range of topics, from the potential applicability of materials and revenue models to the impact of toxicity and behaviour. However, many studies remain shelved and unknown to executive parties. Two steps are essential to remedy this:

1. Knowledge developed in the Netherlands or abroad must be made available, in a logical and convenient manner, to companies and other parties aiming to take concrete steps. Several parties have set up the circular economy knowledge map to this end, funded by the Ministry of Infrastructure and Water Management. The Transition Team believes that this tool must be further developed and embedded under the Raw Materials Agreement. In addition to an expansion of the map, this also requires more efficient communication with the private sector.
2. Insight must be gained in on-going research. Such insight is currently lacking in the Netherlands. Steps must be taken to inventory and liaise such studies.

### **5.1.3 KNOWLEDGE ISSUES RELATING TO CONSUMER GOODS**

In addition to the general questions phrased in the Knowledge Agenda of the Government-wide Programme, several specific questions have emerged within the Transition Agenda for Consumer Goods. Below, these specific questions are listed according to the type of knowledge to be developed (short-term or long-term research). They have not been categorised any further, because in some cases, this was not logical and in other cases clarity was compromised. Ergo, the list below only reflects the studies that need to be conducted with a view to proper implementation of the Transition Agenda.

#### **SHORT-TERM STUDIES**

- A. Research into current state of affairs
  - a. Identifying success factors of best practices relating to new revenue models, from the perspective of business interests. The success factors must be of an economical, social, and environmental nature.
  - b. Examining some failed projects in order to learn from them.
- B. Analysis of the environmental burden of products in relation to circularising such products
- C. Research into expansion of EPR
  - a. Expansion to the packaging, furniture, and textiles sectors.
  - b. EPR as a means to combat litter.
  - c. EPR and international collaboration.
  - d. Research into its current functioning, following on from ongoing studies by, inter alia, the Netherlands Institute for Sustainable Packaging (KIDV), in order to learn from
- D. Research into the possibility of intensifying existing EPR
  - a. Intensification with more financial diversification.
  - b. Intensification with the option of individual return logistics.
  - c. How far can intensification of EPR go? E.g., relating to the number of years that parts must be kept in stock, and to fair-priced repairs.
  - d. Other ways to intensify EPR with the aim of circularising the economy.
- E. Research into consumer behaviour
  - a. Research into consumer behaviour and preferences, and making such research widely available to governments, organisations, and private parties. This enables proper monitoring of changes.
  - b. Examining which consumer measures have a positive impact on the circular economy.
  - c. Examining the extent to which consumers accept, e.g., refurbished goods, and exploring ways to further improve such an extent.
  - d. Collecting knowledge on the optimum useful life of long-cycle and medium-cycle products and disseminating such knowledge to consumers.

- F. Research into return logistics
  - a. What changes need to be made in terms of waste collection, regulations, and logistics in order to safeguard a high quality of secondary raw materials?
  - b. With respect to consumer waste, examining the volume of return flows that can be used for product development.
  - c. How can reverse logistics and waste collection be combined in metropolitan areas?
  - d. What type of model allows close collaboration and data sharing between logistics parties? For example, relating to the travelling loaded/travelling empty ratio of lorries. How can this model be operationalised?
  - e. Exploring the design and operation of advanced networks for the last mile in logistics and the first mile in reverse logistics? What role do urban logistics hubs (UCCs) play in this? Could we develop a so-called physical internet here, in which independent parties can concurrently take care of the last mile for multiple other parties?
  
- G. Research into repurposing
  - a. Developing a plan for the repurposing of consumer products that do not qualify for high-grade recycling, such as glued furniture.
  - b. Research into specific separation technologies.
  - c. Exploring options for phasing out non-recyclable products.
  
- H. Research into design
  - a. Developing knowledge relating to the design of short-cycle products using sustainable materials. Such knowledge can be used in a CIRCO track.
  - b. Developing knowledge relating to the design of long-cycle products using sustainable materials. Such knowledge can be used in a CIRCO track.
  
- I. Research into the sharing economy
  - a. What are the advantages of the sharing economy in terms of the environment and resources?
  - b. How can such sharing economy projects be set up to make the most of such advantages?
  
- J. Research into the second-hand market
  - a. Research into the operation of second-hand markets.
    - i. Are supply and demand balanced?
    - ii. What proportion does the second-hand price bear to the original price?
    - iii. To what extent can second-hand trade extend the useful life of products?
    - iv. Will the residual value play a role in consumer choices in ten years' time?
  
- K. Studies pertaining to legislation and regulations
  - a. Examining the ban on specific disposables. A first step is an exploration of the impact of and support for a ban on certain short-cycle goods.
  - b. Research into regulations hampering circular revenue models, in particular lease legislation, bookkeeping regulations, and accountancy legislation, but also regulations pertaining to ownership and funding models of financial institutions. The liability of manufacturers and the mandatory warranty for the duration of a product's expected lifespan must also be considered in this respect.
  
- L. Developing knowledge in the purview of fully circular festivals and catering

**FUNDAMENTAL AND LONG-TERM RESEARCH QUESTIONS**

- A. Measuring
  - a. Exploring good and simple methods to measure environmental pressure over the entire life cycle of products.
  - b. Study into standardisation and impact assessment within the framework of the circular economy.
- B. Revenue models
  - a. Developing rules of thumb for new revenue models.
  - b. Research into return on risk models. Within the context of setting up a taskforce to experiment with funding (concrete action 29) and new revenue models, knowledge needs to be developed about return on risk models relating to the circular economy.
  - c. Research into guarantees and insurances relating to circular revenue models.
- C. Legislation and regulations
  - a. What do new repair options entail for consumer legislation?
  - b. What do the new revenue models entail for the regulations pertaining to warranty periods?
- D. Market incentives
  - a. Developing a long-term plan for tax incentives. In part, this involves a political process that can be fuelled by entrepreneurs and scientific knowledge. More research and knowledge development are needed in the fields of tax law and sustainability. The introduction of a chair in this field may pave the way.
- E. New technologies
  - a. Research into the options of 3D printing for repairs.
  - b. Research into the options of using the Internet of Things as an enabler of repair, remanufacturing, and recycling.
  - c. Research into the options of block chain technologies for the circular economy.
  - d. Further development of technologies for the separation and high-grade reuse of textiles.
  - e. Further development of separation technologies for flows of raw materials other than textiles.
- F. Design.
  - a. Exploring design strategies for repair and high-grade reuse.
- G. Return logistics
  - a. Research into the organisation and evaluation of smart return systems, in collaboration with the parties involved, such as WeCycle, PostNL, Coolblue, and fitters.
  - b. Research into the most effective modes of transport, on the basis of principle 1 (multiple value), and their impact on the infrastructure of the Netherlands.

## 5.2 INDICATORS

The implementation of the Transition Agenda is intended to lead to the attainment of the goals set out in Chapter 2. This calls for indicators that take account of the principles as described in Chapter 2: indicators at the macro level, addressing the national dimension, and indicators at the micro level, addressing the product dimension. As yet, such indicators have not been elaborated to a sufficient extent. To be more precise:

- Indicators pertaining to a reduction in the consumption of raw materials and environmental pollution are available, e.g., relating to the reduction of CO2 emissions.
- We have a reasonable picture of the indicators pertaining to the preservation of resources, albeit that they have not been elaborated sufficiently. Such indicators relate to, e.g., scarce raw materials.
- Indicators pertaining to the value creation and retention level are still insufficiently available.
- Indicators pertaining to the anchoring of agreements on the entire usage cycle in business models, return logistics, and high-grade processing, based on the R ladder, are still insufficiently available.

At the Springtij 2015 forum, some ten experts from the science sector and the business community already conducted some groundwork regarding the above indicators. Their work can serve as a point of departure.

The Transition Team is particularly looking for indicators relating to value creation in the economic, social, and ecological fields. The lack of indicators is particularly great with respect to the social and economic fields. Here, the circular economy also needs to be linked to economic aggregates such as the Gross Domestic Product and export data. In other words: will working on the circular economy also provide added value to, e.g., export? Or to employment opportunities?

Developing this type of indicators is not easy. Tackling this issue is, however, a top priority. For that reason, the Transition Team calls on the parties involved in the Raw Materials Agreement to develop transparent indicators that tie in with the various Transition Agendas and various scale levels. Local and regional governments must also be involved in the development of such indicators, such as the provinces.

## 5.3 SOCIAL AGENDA

“When planning for a year, plant corn.  
When planning for a decade, plant trees.  
When planning for life, train and educate people.” - Chinese saying

A transition involves a major social change. Ergo, a Social Agenda is indispensable in securing wide public support for the transition towards a circular economy. Social aspects play a part on the labour market, in working conditions, in involving consumers (is the circular economy “inclusive” for a wide range of people, from various educational backgrounds and ages, with various incomes and life styles, et cetera?), and in North-South relations (will the circular economy foster fair trade?). Below, the social aspects are substantiated in a number of concrete actions.

### 5.3.1 PUBLIC SUPPORT

The implementation of the Transition Agenda for Consumer Goods entails quite a great deal. Not just in the sense of new technologies and the use of different materials, but especially in terms of human behaviour. The actual transition will only take place once the new business and revenue models are collectively embraced, once “sharing” becomes the new “owning”, and once repair and the use of refurbished appliances have gained general acceptance. In short: public support is essential.

The main shift in standards involves the movement from owner to user. A slight change in preferences for the sharing economy and the access economy can already be observed. The advantages of temporary access over ownership are acknowledged, but people who are actually actively engaging in such efforts are still regarded as real front runners. The larger this group becomes, the sooner the standard will change. Consumers mainly need fellow consumers to support them in this. Campaigns and other instruments are essential in this respect.

### 5.3.2 COMPETENCIES IN EDUCATION

As the Transition Agenda shows, working on competencies among students and trainees is essential to bring about a circular economy. The Agenda introduces new standards among consumers, but also requires other skills on the part of the working population. In many professions, disciplines will change. Fitters are faced with CO2 reduction and reuse of materials. Accountants have to deal with multiple values. Financial service providers need to work with other revenue models, and bakers are faced with the closure of local loops. Hair dressers, plumbers, designers, bank managers: everywhere things are changing. Without the circular education of students and trainees, the Agenda will be pointless in the long run. Many efforts have already been launched in this field in the Netherlands, but most concern individual initiatives. Some such initiatives involve the formal education sector, such as schools; others involve training courses for the working population. In addition, examples exist of so-called non-formal learning, involving people learning outside a well-structured learning environment. Every one of the existing examples is wonderful, but together they still do not produce the competencies that are required. For that reason, drawing up a master plan, based on the existing initiatives, is essential. That is why we are making a case for the implementation of such a master plan throughout the Netherlands, under the auspices of the five Transition Teams and the DuurzaamDoor programme, in close collaboration with the Coöperatie Leren voor Morgen [Learning for Tomorrow Cooperative]. A master plan from toddler to professional, modelled on the Build Up Skills example, in order to generate a Circular Skills programme.

### 5.3.3 IMPACT ON THE LABOUR MARKET AND EMPLOYMENT OPPORTUNITIES

The implementation of the Transition Agenda will have an impact on the labour market and employment opportunities. New professions will arise, such as that of resource miner, while some existing professions such as that of repair man can expect major growth: designing products for a longer useful life and easy repair will create more job opportunities for repair men. Furthermore, the high-grade repurposing of materials, for example, manufacturing new Senseo coffee machines out of collected plastic, will in practice generate more work in the post-separation and processing process. Another example: a high-grade separation technology that enables the manufacture of new fibres out of old textiles will generate new opportunities for the textiles industry in the Netherlands. According to calculations by the Netherlands Institute for Applied Scientific Research TNO, this could generate some 54,000 net jobs in our country. The precise developments in this respect are difficult to oversee and control. Several studies into general trends and specific sectors have shown that the circular economy will boost employment opportunities. Yet such figures remain macro figures whose impact at the workplace level is, as yet, difficult to estimate. For that reason it would be advisable to focus, under the Raw Materials Agreement, more attention on such issues, especially based on practical lessons.

One thing is clear: crafts are coming back. As stated above, many of the examples featuring a growth in job opportunities involve a craft. The introduction of circular craft centres must create a large number of craft-related jobs: making new products out of discarded materials, repairing products, but also re-upholstering old sofas. In short: the circular economy will boost the prestige of crafts, resulting in more job opportunities for craftspeople.

By contrast, other professions may experience a decline, for example, through the computerisation of administrative work. However, various studies (see above) have shown that the circular economy will have a positive impact on the labour market and that any negative impact can be attributed in particular to other innovations that are unrelated to the transition towards a circular economy, such as robotisation.

Essential in this respect is to capitalise on opportunities, while also having an eye for people at risk of losing their jobs. Retraining and providing new opportunities are vitally important here. Different competencies will be required of employees, and creative solutions will regularly be needed. This calls for attention within the staff policies of private and public organisations. Some examples show that closely involving workers in the circular economy produces excellent results. A case in point is the Interface company; see box.<sup>25</sup>

<sup>23</sup> According to a TNO study, the circular economy could generate 54,000 jobs in the Netherlands

<sup>24</sup> For example, the KPMG Sustainability study into the recycling of electrical appliances and lamps.

<sup>25</sup> Adapted from SER advisory report 'Werken aan de circulaire economie, geen tijd te verliezen' [Working on the circular economy, no time to lose].

Circularising through a personal approach.

Interface manufactures carpet tiles and has been involving its employees in sustainability and the circular economy within the company since 1994. Interface has formulated eight lessons that may be of benefit to others facing similar challenges.

1. Visible leadership and commitment of the senior management is essential to demonstrate that the company is taking sustainability seriously.
2. Form a network of ambassadors to promote the sustainability agenda within the company.
3. Convince employees through a targeted, personal approach. Ensure that the right tools, such as know-how, vision, continuous feedback, and recognition are available to enthuse staff.
4. Make staff members responsible for sustainability goals. This enhances their commitment.
5. Invest in staff in order to have them come up with solutions, through knowledge exchange at all levels and by providing external sparring partners. Stay in touch and use their creativity to find solutions.
6. Promote targeted commitment among staff and stakeholders.
7. Emphasise the sustainability strategy in every message.
8. Avoid cynicism; keep supporting the message by actions. Building confidence and involving staff requires a continuous effort, especially when faced with difficult challenges.
9. Interface has set up the "InterfaceRaise" consultancy service to share lessons and help other organisations to intertwine sustainability into their culture.

This example shows that circular changes in organisations can go hand in hand with effective staff policy, thus enabling an early response to changes, maximum use of tools to involve staff, and if need be, provide in-service training or retraining. This means that organisations must invest in the training and development of their staff. They may do so by creating financial facilities for training, but also by allowing employees time for training. Agreements to this end can be set down in collective labour agreements. One option to explore is to include in-service training and retraining into the EPR set down in the Transition Agenda. The parties involved can thus share the responsibility for developing and implementing appropriate training programmes in the sector. Furthermore, in the best practices relating to the circular economy and the implementation of the iconic projects, explicit attention must be focused on the social dimension and its incorporation into HRM policy. This enables us to learn from actual practice and thus boost social innovation.

One more factor is relevant, in addition to retraining, in-service training, and the adaptation of professions. Working on the circular economy will change the perception of some professions. A job as a refuse collector currently holds little social standing. In the future, such workers will be creating new secondary raw materials and delivering substantial value when it comes to reuse. A new profile for this profession is beckoning. Another example is the combination of cleaners and the circular economy. The Vebege company, for example, shows that cleaners can play a role in the valorisation of residual material, by calling explicit attention to waste management. This enhances the sense of pride among staff. Parties working on the circular economy can make a collective and proactive effort to increase the appeal of jobs and raise their prestige.

Fortunately, in the field of the labour market and transitions, we can learn a great deal from the energy transition that is in full swing. Efforts such as the Build Up Skills programme have been focusing on the timely retraining of people currently working in, e.g., the fitting sector, in order to preserve jobs and ensure that no one will lose out.

The Transition Team has identified a number of concrete actions in this Social Agenda:

Develop campaigns aimed at involving individuals in the change that the circular economy can bring about.

Develop a Circular Skills programme focused on competencies, from toddler to professional, building on the initiative launched by Coöperatie Leren voor Morgen [Learning for Tomorrow Cooperative], in part based on the Build Up Skills programme.

Create a social innovation process with respect to staff policy (HRM) in a broad sense, relating to the circular economy. A point of departure in this is to explicitly include social aspects in the best practices that have been set out.

Ensure that explicit attention is paid to learning at the social level, in the implementation of the iconic projects set out in the Transition Agenda. Involve the R&D funds from various sectors in these efforts and encourage them to contribute to the iconic projects.

## 5.4 INVESTMENT AGENDA

The Action Agenda (see Chapters 3 and 4) lists a range of actions that can be carried out by various actors. Some of the actions are vested with the government, some are vested with consumers, businesses, scientists, or NGOs. Some such actions can be implemented without much additional investment, provided that they command sufficient support and boosting capacity. Other actions first require an investment. In general, coordination and transition issues in the initial stage of the transition to a circular economy involve high transaction costs. Investments in the initial stage thus hold little appeal. Consequently, public resources are currently needed to facilitate the learning curve which will generate the business models and funding options of the future. The plans for the establishment of a public investment fund (InvestNL) provide good opportunities to this end. However, targeted participation in circular companies calls for a specific circular fund.

In short, some actions can be deployed with relatively few resources, while others require sufficient additional investment to be implemented.

This Investment Agenda uses three scenarios with respect to the additional investment:

1. Available funding is limited: up to five million euros per annum;
2. Investment capital is available: up to fifty million euros per annum;
3. Sufficient investment capital is available: one hundred million euros or more.

### 5.4.1 SCENARIO 1. AVAILABLE FUNDING IS LIMITED: UP TO FIVE MILLION EUROS PER ANNUM

#### FOCUS ON PROCESS RESOURCES, EDUCATION, AND NETWORKS

Without additional funding, the Action Agenda cannot be implemented. A minimum scenario involves a highly limited annual financial investment of five million euros. In this scenario, the Transition Team advocates a focus on activities that set processes in motion which subsequently reinforce networks. In concrete terms, the following activities must be funded in this scenario:

#### A. STRONG FOCUS ON REINFORCING NETWORKS AND BOOSTING THE CIRCULAR ECONOMY

It is essential to utilise the energy already present in existing projects and learn from one another. The realisation of the circular economy can be expedited by sharing examples, organising communities of practice, and clearly communicating to the public where they may apply for support. Such efforts must not be vested with a host of different bodies, as they are now, with a continuous wave of new, overarching initiatives; it is important to set up a strong infrastructure that is easily accessible to users and concurrently holds opportunities for many parties in terms of implementation. Initial impulses have already been launched in the Netherlands, such as the City Deals, Nederland Circulair!, CIRCO, Circle Economy, MVO-Nederland, Het Groene Brein, and the Sustainable Finance Lab. The further bundling and embedding of such initiatives is imperative.

Many companies interviewed by the Transition Team have expressed the desire to switch to other business models or to gain more insight into such models. They have indicated that information on such models is fragmented and not accessible. For example, such models are highly dependent on the type of contract concluded, whereas legal expertise is limited. Knowledge of appropriate funding models has not been shared widely either. Consequently, our proposal is to set up a platform for circular design and circular business models, in close collaboration with the networks referred to above. Cf. action item 28 in Chapter 3. This will enable companies to experiment with new models, in public-private collaborations; the required know-how, tailored to each model, will be developed and applied by banks, networks, lawyers, and others. Such a platform must be linked to various parties already engaged in similar efforts, such as CIRCO, Nederland Circulair!, and the BOOST CE initiative.

IKcircuLEER is creating an entirely modular and assessable teaching package on the circular economy for pre-vocational secondary schools. It features practical experiences from sustainable front runners as "living lessons". Seven course modules have already been completed in collaboration with the education world and sustainable entrepreneurs. These can serve as the basis for the further development of other course modules. A full IKcircuLEER teaching package for pre-vocational secondary education requires an investment of 99,000 euros.

#### B. STRONG FOCUS ON COMPETENCIES IN EDUCATION

As already stated, working on competencies in order to foster the circular economy constitutes an essential element in the Action Agenda. Many initiatives have already been launched in this field and many opportunities exist for achieving a great deal at relatively little cost. For example, the successful implementation of the circular economy into the pre-vocational secondary education curriculum would require an investment of no more than some 100,000 euros; see box. Several initiatives are already underway in the secondary vocational education sector as well. For example, the city of Amsterdam is working on the implementation of a secondary vocational education curriculum relating to the circular economy and sustainable energy, in the context of a Regional Investment Fund project. Another case in point is the excellent sustainable vocational education network. Such projects and networks are effective, but still small-scale. An additional annual stimulus of 200,000 euros would enable existing networks to interlink the various projects more efficiently and to embark on the large-scale development of circular economy competencies

in vocational education. A similar approach could be adopted in primary, secondary, and higher education. For that reason, the proposal is to invest a minimum of 500,000 euros in a Circular Skills Programme for circular education, directly linked to the Coöperatie Leren voor Morgen [Learning for Tomorrow Cooperative], that is currently addressing this transition energetically, modelled on the Build Up Skills programme.

#### **C. LODGING EXISTING GOVERNMENT SCHEMES IN A SINGLE ROBUST SERVICE POINT**

Various government instruments are currently available enabling parties to apply for funding for circular projects. They are listed at the Nederland Circulair! website.

We recommend examining whether the various schemes, e.g., those operated by the Ministries of Economic Affairs & Climate Policy, the Interior, and Infrastructure & Water Management, could be lodged in a single service point. Ideally, such a service point would also include the existing schemes operated by other parties, such as the Waste Fund. In this scenario, additional funding, albeit not essential, would create synergy and thus provide impetus. Such an approach could include an SME test, involving the creation of additional scope for SME companies within the existing schemes. In addition, such a service point must set aside resources for professionals to assist companies in taking concrete steps, not by managing the schemes, but by approaching companies and exploring options. A digital service point will not suffice to this end. Ideally, such professionals must operate from the knowledge network as outlined in this Transition Agenda.

Another aspect to be further examined in this context is whether the Invest-NL fund that is currently being established could play a significant part in this.

#### **D. COMMISSIONING SEVERAL CRUCIAL STUDIES**

The Knowledge Agenda lists several crucial questions, one of which pertains to the development of rules of thumb for the results and impact of new business and revenue models. Our recommendation is to conduct several such studies in 2018, no matter what.

#### **E. AMENDMENT OF LEGISLATION AND REGULATIONS**

The government must invest in manpower in order to swiftly amend some impeding regulations and to create opportunities for testing grounds and experimentation.

#### **F. BOOSTING THE IMPLEMENTATION OF THE AGENDA**

The implementation of the agenda requires a great deal of effort. One essential item is the efficient control of its implementation, but also a proper focus on boosting such efforts and on taking decisions. Control is a precondition in this respect. This requires sufficient capacity.

#### **5.4.2 SCENARIO 2. INVESTMENT CAPITAL IS AVAILABLE: UP TO FIFTY MILLION EUROS PER ANNUM**

##### **FOCUS ON IMPLEMENTATION OF ICONIC PROJECTS AND CONTEST**

An additional funding stimulus of fifty million euros per annum will expand the substantiation of the agenda. In this scenario, the Transition Team advocates the following activities in the field of funding, supplementary to scenario 1.

##### **FUNDING OF THE ICONIC PROJECTS**

Chapter 4 outlines six iconic projects. The ideas for these projects have been fleshed out and each of these iconic projects commands public support. Therefore, steps can be taken fairly quickly, in terms of substantiating the projects and in terms of setting up and elaborating all the research required with respect to these iconic projects. The six iconic projects have been selected so as to ensure that a large number of the action items outlined in Chapter 3 will be substantiated. Since the projects may cause snowballing, the Transition Team advocates the setting up of and investment in these six iconic projects as the first step.

A proportion of the investments required for these iconic projects can be raised by the private sector. However, additional funding from the government will also be required. For that reason, the business cases of the six iconic projects will be submitted to the Netherlands Enterprise Agency (RVO) and Rijkswaterstaat [the executive branch of the Ministry of Infrastructure and Water Management] to explore the options of the existing government tax, subsidies, and funding tools for facilitating the projects, and to review where and to what extent they can be facilitated. Other aspects that will be examined in this context are whether the Invest-NL fund that is currently being established could play a significant part in this, and whether existing schemes will suffice, or additional government support will be advisable.

These iconic projects are costed as follows:

- Furniture: estimated at 6 million euros per annum;
- Circular Textile Valley: 15 million euros;
- Quality needs work: 4 million euros;
- Product-as-a-service: 5 million euros for the initial stage and research; the remainder must be raised by the private sector;
- Sharing economy: 3 million euros per annum for the model projects outlined;
- Collectively proud of successful efforts: 250,000 euros per annum.

All the iconic projects must be finalised in public-private collaborations. For each iconic project, a business plan will be developed in early 2018, including a specification of the costs and the expected results.

##### **CONTEST**

The Transition Team wants to make a case for a contest as an instrument. This instrument was also regarded as promising in a recent report by the Netherlands Bureau for Economic Policy Analysis (CPB). A contest can be deployed for both major circular challenges and smaller steps. The recommendation is to put up a significant sum in this contest in order to elicit innovations that could, e.g., turn into new iconic projects.

#### **5.4.3 SCENARIO 3. SUFFICIENT INVESTMENT CAPITAL IS AVAILABLE: ONE HUNDRED MILLION EUROS OR MORE**

##### **FOCUS ON HEDGE FUND AND SUBSIDY SCHEME**

The availability of financial resources is a crucial precondition for the full implementation of the Transition Agenda. If such resources are available, the Transition Team proposes, supplementary to the proposals listed under scenarios 1 and 2, an additional focus on the establishment of a fund investing solely on the basis of a leverage concept. Leverage based on the flywheel effect: setting up a project involving several millions of euros with a limited investment of, e.g., 100,000 euros. A fund enabling innovative activities relating to the circular economy. With respect to such a fund, private parties will already have set down a sound plan that can actually be realised with an additional financial stimulus, always in public-private collaborations. Such a stimulus may come from a separate fund at the product level (for example, a mattresses fund), but also from a more general circular fund available to all the Transition Agendas. Such a fund will, in particular, comprise a funding component that can be used supplementary to existing tax and subsidy instruments to cover the as yet unprofitable top of circular business cases, for example, those involving product-as-a-service projects. This fund could be set up as a component within Invest-NL, aimed at specific goals relating to the circular economy.

In the implementation of the sector plans, the Consumer Goods Transition Team will closely collaborate with the Netherlands Enterprise Agency and the fund manager to map out learning experiences with respect to the suitability of and potential adjustments to existing tax, subsidy, and funding instruments and the fund.

## SUBSIDY SCHEME

In addition to investments, subsidies are also needed in this stage of the circular economy. A subsidy scheme modelled on the schemes in the energy field appears to be a good choice in this respect. Several parties suggest a version of the SDE+ [Promoting Sustainable Energy Production] programme focused on the circular economy: Promoting Sustainable Use of Materials, in Dutch abbreviated to SDM. This programme must support the following purposes:

- Converting waste into secondary raw materials, either by traditional recycling or by chemical recycling;
- Fostering the objectives of the Paris Climate Agreement of December 2015;
- Promoting the use of secondary raw materials/recyclates or secondary raw materials in products;
- Prioritising secondary and bio-based materials.

Companies and (non-profit) institutions producing secondary raw materials, or intending to do so, could avail themselves of the SDM scheme. The subsidy scheme is intended to promote recycling and reuse of discarded products, materials, and resources. With this scheme, the Ministry of Economic Affairs & Climate Policy could promote the development of a sustainable and circular economy in the Netherlands. Secondary raw materials are better for the environment, reduce the Netherlands' dependency on primary raw materials, and foster the economy.

### 5.4.4 FUNDING STRUCTURE

The funding method is an important consideration in the financing of the iconic projects and the establishment of the fund (scenarios 2 and 3), since the projects require investments by various parties: a proportion to be provided by existing investment institutions, another proportion by the government. For that reason, it would be advisable to draw up a checklist with the following key components:

1. Investing, in collaboration with the parties involved, in a proper specification of the revenue model;
2. Reviewing the elements that could reduce longer-term risks, such as commodity prices and the like;
3. Reviewing which public-private parties need to be involved in the funding, based on the impact of the proposal and the risks outlined, and what division of roles would be appropriate in this respect;
4. More detailed risk assessment based on the revenue model and exploring appropriate funding formats, such as venture capital / debt financing or cash flow financing;
5. Selecting the financier in relation to the scope of the investment:
  - a. Comparatively small investments, e.g., in the 100,000-euro range, will generally be difficult to secure through the regular route of banks and institutional investors;
  - b. Bundling through a fund might be a solution.

As a rule, cash flows are important in financing. In the event that cash flows are, as yet, insufficient to finance a project in the current financing market, one of the parties will have to make a sacrifice in order to proceed nonetheless. Such a decision can be made collectively if a project has sufficient impact. The solution in this is to initially accept lower profitability vis-à-vis a more sustainable business model in the longer run.

## CHAPTER 6. PROGRAMME-BASED APPROACH TO THE SUBSEQUENT STAGE, INCLUDING GOVERNANCE AND MONITORING

The Transition Agenda for Consumer Goods will be presented on 15 January 2018, together with the other four Transition Agendas. Subsequently, the following issues will need to be addressed with respect to the Agenda pertaining to consumer goods.

### 1. THE AGENDA IS NOT FINISHED

The Agenda has been established over a few months, and no doubt issues will be missing or proposed actions will turn out to be less efficient than originally assumed. The Agenda is open to continuous fine-tuning. It is our hope that it will be a living document.

The Agenda must be supported by many parties that could be involved in actions. For example, in certain sectors, individual agreements could be made with the sector organisations, businesses, government authorities, and NGOs. This takes time and requires broad support. The garnering of support has already started and will continue without cease.

### 2. IMPLEMENTATION OF CONCRETE ACTIONS THAT COULD BE TAKEN UP RIGHT AWAY

Some concrete actions can be implemented immediately, or in any case, can be prepared. Our proposal is for the Transition Team to continue in 2018 in order to exercise control over the implementation of the concrete actions. This requires a working budget and staff committed to exercising control.

### 3. DEVELOPING A STRATEGY AND LONG-TERM FOCUS

The Transition Agenda features several issues that require political choices and international collaboration. Our proposal is to draw up a separate plan, together with those involved, to get these actions off the ground.

### 4. INDICATORS AND MONITORING

The Transition Agenda features several sub-goals from which indicators could be derived. As yet, these have not been rendered quantifiable. Instruments to this end still need to be set up and developed.

### 5. LONG-TERM CONTROL AND FOCUS

As already stated under 2, we propose to continue the Transition Team in 2018 in order to exercise control over the concrete actions that can be taken up immediately. In addition, the Transition Team still needs to develop a plan for the control and focus in the longer term. Such a plan could involve the appointment of a national ambassador for the circular economy, modelled on the success of the Special Envoy for International Water Affairs for the Kingdom of the Netherlands. Another element could be the appointment of a circular economy assurance commission, by analogy with the Energy Agreement. The circular economy assurance commission could report on the progress made, e.g., twice a year, whether or not in interconnection with the energy agreement assurance committee.

