



## The EU Circular Economy Package and SMEs in Amsterdam



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**We cannot solve our problems with the same thinking we used when we created them.**

*- Albert Einstein -*

## Table of contents

<b>1</b>	<b>Introduction</b> .....	<b>4</b>
1.1	Research aim and questions .....	4
1.2	Reading guide .....	6
<b>2</b>	<b>Research phases</b> .....	<b>7</b>
<b>3</b>	<b>Understanding the circular economy</b> .....	<b>8</b>
<b>4</b>	<b>Typology of SMEs and the circular economy</b> .....	<b>10</b>
<b>5</b>	<b>Interventions for environment improvements by SMEs</b> .....	<b>13</b>
5.1	Compulsory regulation .....	13
5.2	Financial penalties.....	14
5.3	Voluntary standards .....	15
5.4	Financial support.....	16
5.5	Environmental audits .....	17
5.6	Business advice.....	18
5.7	Conclusion.....	19
<b>6</b>	<b>Hypotheses</b> .....	<b>20</b>
6.1	Integrated research model and hypotheses.....	20
<b>7</b>	<b>Results</b> .....	<b>22</b>
7.1	Exploring the circular SMEs .....	23
7.2	Drivers .....	24
7.3	Obstacles .....	25
7.3.1	<i>Ruling structure</i> .....	25
7.3.2	<i>A lot of talking, little action</i> .....	26
7.3.3	<i>Ambiguous definition</i> .....	27
7.3.4	<i>Funding</i> .....	28
7.3.5	<i>Different mindsets</i> .....	30
7.4	Needs of SMEs.....	30
7.4.1	<i>Demand</i> .....	31
7.4.2	<i>Subsidy program</i> .....	33
7.4.3	<i>Coach</i> .....	34
7.4.4	<i>Partnership</i> .....	34

7.5	European Circular Economy Package.....	35
7.5.1	<i>Financial support</i> .....	35
7.5.2	<i>Business advice</i> .....	36
7.5.3	<i>Voluntary standards</i> .....	37
7.6	Conclusion.....	37
<b>8</b>	<b>Conclusion and discussion</b> .....	<b>38</b>
8.1	Obstacles .....	38
8.2	EU support mechanisms.....	39
8.3	The discrepancy between EU support mechanisms and needs of SMEs.....	39
8.4	Discussion.....	40
	<b>References</b> .....	<b>42</b>
	<b>Appendices</b> .....	<b>48</b>
Appendix A	The survey .....	48
Appendix B	Case studies.....	52
Appendix C	Structure and questions for interview .....	52

# 1 Introduction

The circular economy is seen by the European Union (EU) as a possible solution to cope with the current issues it faced: a growing world population, the finiteness of natural resources and the global battle for resources. The concept of circular economy has gained traction in the European policy-making as it corrects the inefficiencies of the linear economic model (European Commission, 2015a). It is a systematic change of the economic system which bypasses material leakage and disposal. It also goes beyond the efficiency gains of a greener economy by addressing the issue of the inevitable finiteness of natural resources (Braungart, McDonough & Bollinger, 2007; Pauli, 2010). On 2 December 2015, the European Commission presented the Circular Economy Package in which the importance of green growth is stressed in order to ensure a sustainable economic recovery with the long-term vision of a low-carbon and resource-efficient European economy. The aim of the package is to *'ensure that the right regulatory framework is in place for the development of the circular economy in the single market, and to give clear signals to economic operators and society at large on the way forward with long term waste targets as well as a concrete, broad and ambitious set of actions, to be carried out before 2020'* (European Commission, 2015d, p. 2).

In order to make the transition successfully, not only policymakers and influential companies should be involved in the process, but small- and medium-sized enterprises (SMEs) as well. SMEs represent 99% of all European enterprises, provide for more than two-thirds of European employment and are contributing 58% of value added in the EU (European Commission, 2016a). As they cause roughly 64% of the European industrial pollution and only up to 24% of SMEs engage actively in reducing environmental contamination (Eurobarometer, 2015). So SMEs are collectively responsible for a great EU economic and environmental impact, and thus play a crucial role in the EU's success to transform its economy towards the circular economy. However, traditionally, European policies are mostly aimed at the needs of the 1% of EU's large enterprises (Coen & Danreuther, 2003). Moreover, literature emphasizes that SMEs faces higher barriers to innovate and improve their environmental performance compared to larger companies. The reason for the lagging behind of SMEs in terms of environmental performance is often a reflection of their specific characteristics such as limited technical capabilities, resources and knowledge (Hudson, Lean & Smart, 2001; Parker, Redmond & Simpson, 2009). To ensure an active role of SMEs in the circular economy, SMEs need fitted European support mechanisms. With the Circular Economy Package, the EU acknowledges the important role SMEs play in the transition towards the circular economy and therefore published along with it the Green Action Plan for SMEs. The Green Action Plan aims to encourage SMEs to transit to a circular business model (European Commission, 2014b). This is the first European Commission communication which directly addresses SMEs to adopt circular business models. It is interesting to examine whether this new focus in the Circular Economy Package on SMEs meet the actual needs of SMEs.

## 1.1 Research aim and questions

The aim of this study are the following two objectives:

- Providing the European level with insights into the effectiveness of the Circular Economy Package in the transition of SMEs towards the circular economy. To the present day there

is a shortage of policy studies into the effectiveness of established European circular policy from a business perspective of SMEs. Research has been done on what kind of support measures the EU should provide to SMEs but never has there been research on the effect of an EU circular policy that is already in place (Horbach, Rennings & Sommerfeld, 2015). Furthermore, governments give much attention to large enterprises because their individual impact is significant while the individual impact of SMEs is often neglected (Rutherford, Blackburn & Spence, 2000). If European circular policies look behind the large companies, it is mainly focused on companies as a whole. This ensures that one-size-fits-all approaches are provided which does not fit with the specificities of SMEs (Calogirou *et al.*, 2010; Studer, Welford & Hills, 2006; Department of Environmental Affairs, 2000).

- Contributing to theory about the interaction between European policy related to the circular economy and SMEs. SMEs drivers and barriers have been identified in the literature about sustainability, but this has not happened yet for the circular economy (FUSION, 2014). The transition to the circular economy requires a systematic change which involves reorganization of activities and rethinking of business models. Businesses will face other drivers and barriers than pursuing efficiency gains and restorative use of non-renewable resources with sustainability. These drivers and barriers are not explored in academic studies yet.

Concluding, in the academic and policy world there is a shortage of information about the ground-level development and implementation of the circular economy within the EU. This study has as aim to further explore this knowledge lacuna.

It is chosen to study only SMEs that are already interested in changing to a circular business model and are situated in Amsterdam. The first criterion ensures that the SME already has knowledge of the concept of circular economy and thus may already have come into contact with support mechanisms. To what extent they are involved in the circular economy can vary from the initial stage of the adoption of circular principles to a more advanced stage. The second criterion is because the Netherlands made the transition to the circular economy as one of the key priorities of their term, the Presidency of the Council of the European Union in the first half of 2016 (EUNL2016, 2016). The Dutch Presidency wanted to make the city of Amsterdam the hotspot of the circular economy, so if European support is expected somewhere it has to be in Amsterdam. Therefore, the impact of the EU policy is studied in Amsterdam because it can be assumed that if it is not working properly there it will not work properly anywhere.

The main research question which can be derived from the problem and the research aims is:

*To what extent do the EU support mechanisms articulated in the EU Circular Economy Package of 2 December 2015 provide a sufficient basis for SMEs in Amsterdam to support them in the transition towards a new circular business model?*

In order to come to a meaningful answer to the above stated research question, several sub-questions have been formulated which will be answered during the study:

- *Which obstacles do SMEs face concerning the implementation of circular economy principles?*

- *Which EU support mechanisms for SMEs listed in the EU Circular Economy Package are used by SMEs?*
- *To what extent is a discrepancy present between the support mechanisms and the needs of the SMEs, and how might this be solved?*

## **1.2 Reading guide**

In chapter 2 the research phases of this study are explained. Chapters 3 to 6 discuss the context and theories which form the theoretical background of this study. First, the concept of circular economy will be explained and then the typology of SMEs based on their degree of business performance and environmental commitment. Thereafter, the different public interventions are analyzed and their impact on the different types of SMEs. Here, the support mechanisms which are aimed at SMEs articulated in the Circular Economy Package are also categorized into the different categories. In chapter 6, the hypotheses of this study are addressed. Also the choices made in this study are explained and the conceptual model is presented. Chapter 7 analyzes and presents the results of the survey and the conducted interviews. This study will end with a conclusion that answers the central question and a discussion of the study.

## 2 Research phases

The study is composed of a mixed-methods approach as each phase uses a different research method, which includes both qualitative and quantitative methods. A quantitative research method is used for the descriptive part of the study as it allows to collect a large amount of data and to compare it easily with each other (Saunders, Lewis & Thornhill, 2009). The descriptive part is to gain insight into the knowledge and use of European support mechanism by SMEs in Amsterdam. A shortcoming of this method is that it leaves no room for an explanation of the cause and effect of the relationship due to the limited number of variables included in a survey. To get a better understanding of this, an explanatory research is required. Semi-structured interviews allow flexibility as the interview questions be adjusted based on the participant response. This ensures that relevant contextual conditions are taken into consideration (Ekanem, 2007). Therefore, a qualitative research method is used for the explanatory part of this study. A case study analysis allows for a more in-depth exploration of the interaction patterns collected by the survey. The strength of combining a survey with case study analysis is to improve the generalizability of the research results: the the small sample of a case study analysis limits the ability to generalize the findings, and in combination with a survey, which comprises the entire population, overcomes this deficiency and enables the generalization of the research conclusions for all circular SMEs in Amsterdam. This research is divided into three research phases.

### *Phase 1: literature review*

The first phase of this study is to outline the context and the theoretical framework by reviewing literature on the concept circular economy, SMEs in the European economy and the identified challenges SMEs face to cope with European environmental policy. A theoretical framework will be constructed and subsequently the hypotheses of this study will be developed.

### *Phase 2: survey*

The second phase will encompass a short survey conducted among circular SMEs in Amsterdam. The questionnaire will be based on the findings of the literature review and the European Circular Economy Package. To recruit participants, the 'snowball' method will be used: in the survey the participants are asked whether the SME can send the survey to other SMEs which meet the requirements of this study.

### *Phase 3: case study analysis*

In the third phase the theoretical framework and formulated expectations are tested through in-depth interviews with circular SMEs in Amsterdam. The cases will be selected from the data provided by the survey. The interviews will be conducted with the owner-managers or with the environmental manager of the SME. An interview guide which is based on the literature review and the results of the survey will be prepared for guidance during the interviews. This is a list of topics and questions that have to be covered during the interview. Creating a basic structure for the interviews enables that the interviews can be compared and simultaneously still leaves sufficient room to explore interesting side paths during the interviews. Still the interviews will be semi-structured, because the course of the question asked will depend on the answers given by the interviewee. All the questions in the interview are open-ended which is in line with the exploratory nature of the interview.

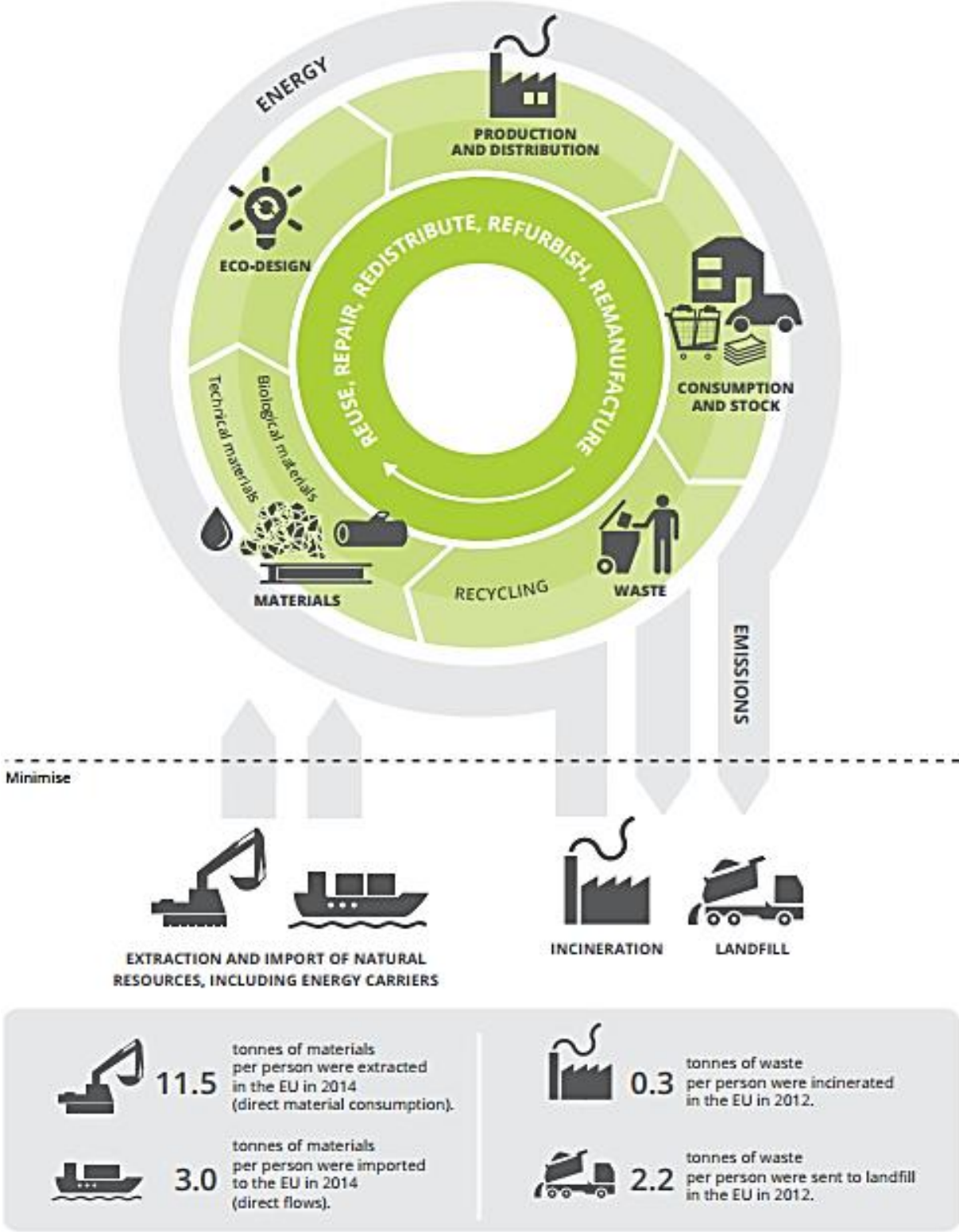


### 3 Understanding the circular economy

The current linear model of resource consumption follows a take-make-dispose pattern. Manufacturers mine raw materials from the earth (take) to produce products (make) which will be sold to consumers. Consumers discard a product after its usage period has ended (dispose), which will then be sent to landfills or incinerators. This is an ever repeating process. The linear economy is challenged by its inefficient use of natural resources which is reflected in the high and volatile commodity prices. Research done by IMF shows that the average commodity prices per month has fluctuated more than twice as much in the last decade compared to the period 1992 to 2005 (Alquist & Coibion, 2013). The price volatility is accompanied by uncertainty in resource supply which expose European businesses to a high risk due to their high dependence on the import of raw materials (Ellen MacArthur Foundation, 2015). In addition, the rapid growth of the world population increases the pressure on the extraction of finite natural resources (Korteweg *et al.*, 2011). The EU sees the circular economy as a solution to the current issues of the limits of the linear economy (European Commission, 2015a). The circular economy breaks the linear economic system by adding value to waste by redefining waste as a resource which will be reused for another process. The materials and components of a used product have to be recycled without quality loss so that they continue to make a valuable contribution to the economy. This requires products be designed in such a way that at the end of the use phase the product can easily be remanufactured, refurbished or recycled. Material flows are maintained in continuous loops and therefore minimizes, or even eliminates, the generation of waste (Joustra, de Jong & Engelaer, 2013; EEA, 2016). This closed loop thinking ensures an efficient use of materials, minimization of waste generation, release pressure from finite natural resources and a minimization of environmental pollution (Lehmann, 2010; Calkins, 2008; Bastein *et al.*, 2013).

To get a better understanding of how the loops within a circular economy evolve, the concept will be explained in accordance with a visualization of the circular economy (figure 1). The outer circle represents the overall flows of energy. Compared to the linear economic model, the circular economy has an increase of energy efficiency and the total share of renewables. The middle circle represents the flow of materials. A distinction is made between two recycling loops: the flow of biological materials, which are non-toxic and renewable materials, and the flow of technical materials, which are derived from finite natural resources. Technical materials have to be kept in the economy through closed loops that maintain, reuse, remanufacture or recycles products after they have been used (Verstraeten-Jochems *et al.*, 2014). It is of importance that the materials are upcycled instead of downcycled, which happens in the majority of cases in the current economy (Braungart, McDonough & Bollinger, 2007). Upcycling means that waste is converted into materials of the same or higher quality and thus creates continuous closed loops in the economy, while downcycling is an unsustainable leakage in the loop as waste is converted into materials or products of lower quality than the original value of the material. As a result, these materials cannot be reused again and again for new processes (Verstraeten-Jochems *et al.*, 2014). The inner circle indicates the descending order of preference for action in order to maintain the value of a product. The aim of the circular economy is to extract maximum value from resources and at the same time generate the minimal amount of waste. If materials or products cannot be reused, it should be repaired. However, if this is not possible it should be redistributed and otherwise may be refurbished. The option of last resort is remanufacturing.

Figure 1: A simplified model of the circular economy for energy and materials.



Source: Ellen McArthur Foundation & McKinsey, 2015.

## 4 Typology of SMEs and the circular economy

SMEs are enterprises which ‘employ fewer than 250 persons and which have an annual turnover not exceeding €50 million, and/or an annual balance sheet total not exceeding €43 million’ (Article 2 of EU recommendation 2003/261; table 1). These ceilings apply only to individual companies. If a company is part of a larger group, the company has to include the data of the staff headcount, annual turnover and balance sheet total from the entire group.

**Table 1: Definition of an SME.**

Company category	Staff headcount	Annual turnover	Balance sheet total
Medium	< 250	≤ €50 million	≤ €43 million
Small	< 50	≤ €10 million	≤ € 10 million
Micro	< 10	≤ €2 million	≤ € 2 million

Source: European Commission, 2003.

SMEs account for 99% of the total number of enterprises in the EU, with an average of five SMEs per km<sup>2</sup> of Europe’s land area. In 2014, SMEs employed 90 million people in the EU, which is 67% of total employment, and generated 58% of the sector’s value added (European Commission, 2015f). About 40% to 45% of the European SMEs are categorized as having a high impact on the environment, based on the amount of waste production, energy consumption and perceived environmental contamination (Calogirou *et al.*, 2010).

Despite the linear economy faces inevitable limits and the circular economy may be the solution for these issues, SMEs are not eager to implement the circular principles in their business models so far (European Commission, 2014a). Studies have focused on the identification of factors affecting the decision of an SME owner-manager to contribute to the improvement of the environment (Studer, Welford & Hills, 2006; Gadenne, Kennedy & McKeiver, 2009; Mir, 2008). The factors may act as a driver or as a barrier for an SME to implement environmentally conscious operations. Eurobarometer (2015) found that one of the main drivers for companies to implement environmentally friendly improvements to their business is the intervention of public policy. This can take the form of an effective enforcement of environmental policies, as well as the provision of support mechanisms, such as the creation of environmental tax, funding or providing training. In practice, however, the majority of SMEs that undertake circular actions (61%) rely primarily on their own financial resources and technical expertise. Only a small minority of SMEs (19%) rely on external support which mainly derives from private sector funding (79%). This makes it important to study why SMEs make little use of public support and what their needs are here. Besides the little use of external support, there are other factors that influence the decision of an SME to undertake circular action. The most important factors that can be distinguished in the literature are internal stimuli and challenges (knowledge, technical skills and capacity) and external stimuli and challenges (regulation, financial incentive and external demand; table 2). These factors will be further discussed through the next chapter.

**Table 2: Incentives and challenges of SMES environmental improvement.**

	Factors	Description
Internal	Knowledge	Extent to which SMEs have knowledge about the concept of circular economy (FUSION, 2014), knowledge about the impact of an SME on the environment (Cook, Bhamra & Lemon, 2006) and knowledge about how to engage in circular economy (Kok, Wurpel & Ten Wolde, 2013).
	Technical skill	Extent to which SMEs have the internal technical skills to identify, asses and implement new advanced technical operations (Rademeakers, Asaad & Berg, 2011).
	Capacity	Extent to which SMEs have human capital and time to comply with environmental requirements (Calogirou <i>et al.</i> , 2010) and to apply for grants (Müller & Tunçer, 2013).
External	Regulation	Extent to which environmental regulations exist and are comprehensive enough to force SMEs to engage in the circular economy (Bicket <i>et al.</i> , 2014).
	Financial incentive	Extent to which SMEs have access to finance to implement circular business models (Artola & Genre, 2011).
	Demand	Extent to which the customers demand for environmental improved products and services exist and are willing to pay for this (Eurobarometer, 2014).

There are two main deficiencies with the factor analysis in the literature. First, the literature does not ensure that the factor approach is turned into a framework that policymakers can use to improve their environmental programs that encourage SMEs to make environmental improvements. Second, the factor approach does not give insight in the internal characteristics of an SME that determine the behavior of an SME. SMEs are of such a small size that the manager is usually also the owner of the company, and thus is responsible for the strategic decision-making of the company (Jenkins, 2004; Williamson, Lynch-Wood & Ramsay, 2006). This ensures that the business owner’s personality, managerial vision and knowledge determines the organization and the operation of the company (Nicolescu, 2009). If it lacks an effective enforcement regime that encourages the implementation of the circular principles, environmental improvements by an SME are the result of the commitment to sustainability by the owner-manager (Seidel *et al.*, 2008; Calogirou *et al.*, 2010). Some owner-managers have a positive attitude towards improving the environment, specifically the circular economy, and others have not. In the literature, various reasons have been studied that may explain the divergence of views by owner-managers towards a green business. A major influence is the desire of a company to grow rapidly which ensures that companies focus on the financial benefits in the short-term rather than the long-term social benefits. On the other hand, some manager-owners value the long-term benefits of wellbeing and sustainability as high or even higher as the financial gain in the short-term (Kok, Wurpel & Ten Wolde, 2013; Bradford & Fraser, 2008). Also the sector in which the SME operates is an important factor for SMEs awareness of sustainable issues or the expected relevancy of sustainable development for the company (Hansen & Klewitz, 2012). Parker, Redmond & Simpson (2009) have distinguished four extreme types of SMEs with different internal characteristics that influence its degree of business performance and environmental improvement (table 3):

- *Profit-driven*: the owner-manager focusses on financial goals rather than environmental objectives. These enterprises have a high degree of business performance commitment, which means that they are focused on turnover and profit. They want to reduce the cost at every opportunity to ensure they have price leadership in competitive sectors, even if it has a negative impact on the environment. They will not comply with environmental

requirements as it will reduce their profits. The degree of environmental commitment is low.

- *Advantage-driven*: the owner-manager focusses on financial goals that will be achieved through the pursuit of actions intended to have a positive impact on the environment. These enterprises have a high degree of business performance commitment due to their objective of profit maximization and growth. In addition, they also have a high degree of environmental commitment because it ensures their competitive advantage. These characteristics ensure that they are proactive and innovative in new environmental improvements, and therefore have much knowledge about environmental improvements.
- *Compliance-driven*: the owner-managers are focused on the survival in highly competitive industries. These enterprises are not proactive, but response to customer demand or regulatory requirements, which ensures a low degree of business performance commitment. In addition, they do not seek for environmental improvements beyond compliance, because it is perceived as costly and therefore may affect their competitiveness negatively, which ensures a low degree of environmental commitment.
- *Environment-driven*: the owner-manager is driven by a moral obligation or duty to make environmental improvements and is not driven by financial goals, such as maximizing profits or growth. These SMEs reduce their negative impact on the environment, even if it means that their competitive position will be deteriorated. Therefore, these enterprises have a low degree of business performance commitment and a high degree of environmental commitment.

**Table 3: Typology of SMEs types for analyzing environment improvement.**

Degree of business performance commitment	High	Profit-driven	Advantage-driven
	Low	Compliance-driven	Environment-driven
		Low	High
		Degree of environmental commitment	

These different types of SMEs need different kind of interventions from external parties to make sure the SME invests in implementing the circular principles. The different types of SMEs react differently to the various interventions. However, until now, studies that have examined various interventions of the government did not take into account how different types of SMEs respond differently to the same intervention. It is important to understand this relationship in order for the EU to implement a broad policy mix of interventions which is needed to enable all types of SMEs to transit to a circular business model. Unfortunately, there is no data available about the proportion of each type of SME in the European economy.

## 5 Interventions for environment improvements by SMEs

Tallberg (2002) discussed two contending claims about the source of non-compliance by actors to public policy and the most effective means for addressing this problem. These two schools of thought reflect different visions of which policy tools should be used to handle implementation problems. On the one hand, the enforcement theorists argue for a coercive strategy of monitoring and sanctions by the government, because they assume actors are rational that weigh the costs and benefits of alternative behavioral choices when deciding to comply. Governments have to establish an incentive structure in which the advantages of the implementation of circular principles exceeds the cost of not doing it. Interventions which fit with these line of reasoning are compulsory regulations and financial penalties. The management theorists, on the other hand, emphasize a problem-solving approach, because they assume that an actor is willing to comply with the policy, but does not have the capacity to do so. Governments should help actors with capacity-building which is brought about through the interventions voluntary standards, financial support, environmental audits and business advice.

Which measures are most effective to bring about a transition to the circular economy in the EU will be further explored below. Here will be looked at what measures the government can take to bring about the transition and how the different types of SMEs are differently affected by a particular measure. Also, the European support mechanisms from the Circular Economy Package are categorized and discussed under the category.

### 5.1 Compulsory regulation

A lack of a comprehensive legislative framework for the circular economy is for many SMEs (29%) a major obstacle (Eurobarometer, 2015). Environmental legislation leaves much room for discussion on the definitions into the waste management policy and the application of the waste management hierarchy. The ambiguity of the legal framework ensures that companies implement green operations according to their own standards, which cause large differences of greening between businesses and therefore uncertainty on the economic market (Hillary, 2004; Bicket *et al.*, 2014). In addition, the current legal framework is based on linear thinking that may block the creation of innovative circular business models. For example, financial incentives provided by the government, such as value added tax (VAT), stimulates high material consumption above services. The tax ensures that labor becomes expensive and materials are relatively cheap (Rli, 2015). Regulation has to ensure circular economy based products can compete with other linear products on a more even footing (Kok, Worpel & Ten Wolde, 2013; Wallace & Raingold, 2012).

Regulatory enforcement is effective for enterprises that do not comply with for their own preference and not because they want to comply but do not have the capacity to comply with the regulation. This is because compulsory regulation is supported by the explicit threat of punishment for non-compliance and thus does not contribute to capacity-building. However, this measure is only effective if it is enforced for all SMEs equally (Tallberg, 2002). Compliance-driven SMEs are in favor of compulsory regulation to simulate environmental improvements, as this forces profit-driven SMEs in their industry to comply with regulations. If these SMEs do not conform they will be fined and this will increase their costs. If the fine is high enough, the advantages of implementing circular principles will exceed the cost of not doing it. In other words, compulsory regulation creates a level playing field (Revell & Blackburn, 2007). Also advantage-driven SMEs will benefit from compulsory regulations because it will create new

business opportunities for them (Walley & Taylor, 2002). For environment-driven enterprises, these interventions will not have a significant impact, because they already meet the minimum criteria due to their high environmental commitment.

Although the compliance-driven, advantage-driven and environment-driven enterprises see compulsory regulation as an effective measure as it creates a level playing field, to comply with compulsory environmental regulation frequently request costly financial and time resources (Revenue, 2008; OECD, 2010; Calogirou *et al.*, 2010). One in five SMEs (21%) finds it difficult to adapt environmental legislation to their company and 15% have difficulties with keeping up-to-date with the technical requirements of environmental legislation (Eurobarometer, 2015). Furthermore, the reporting of environmental data to authorities is often a complex and time consuming job because the data has to be send to different authorities in different formats. Often SMEs need to hire external consultants and experts who have the knowledge of the obligations which the company has to meet. However, these are additional costs for an SME, which may be significant for a small company and cannot be paid by the SME (Calogirou *et al.*, 2010; Görlach *et al.*, 2006). A study conducted by OECD (2010) came to the conclusion that the administrative compliance costs per employee were over five times higher for SMEs than for large enterprises. This can be explained by that SMEs have less specific knowledge and capacity to continually meet the requirements arising from the environmental laws compared to larger enterprises. In addition, the same administrative burden has a disproportionate effect on SMEs compared to large companies because SMEs have fewer employees than large companies (OECD, 2010). It will be challenging to convince all SMEs, especially the profit-driven SMEs, to develop environmental commitment through compulsory regulations.

## **5.2 Financial penalties**

Financial penalties, such as levies and taxes, can ensure that the undertaking of non-circular actions are less appealing for SMEs than circular actions. This is because non-circular activities become more expensive by financial penalties than circular activities (Carter, 2007). For example, in 2005, Germany has created the opportunity for circular carpets to increase its market share by introducing a high tax on carpets in landfills (Kok, Wurplel & Ten Wolde, 2013; Wallace & Raingold, 2012). There will be then a risk that profit-driven enterprises will dump their waste illegally. This can be counteracted by ensuring that the correct cost-effective services such as waste collection are easily available (Revell & Blackburn, 2007). Financial penalties are especially effective for profit-driven and compliance-driven enterprises due to their low degree of environmental commitment. This intervention ensures that they will comply with the circular requirements, otherwise it costs a lot of money and that could adversely affect their competitiveness (Bradford & Fraser, 2008). A disadvantage of financial penalties is that they do not change the degree of environmental commitment of profit-driven and compliance-driven enterprises inherently. They will only meet environmental regulations if it is cost-effective (Tilley, 1999). The financial penalties do, however, enhance the existing environmental values of advantage-driven and environment-driven enterprises, because it makes environmental harm more visible than the 'command and control' type of compulsory regulations (Revell & Blackburn, 2007).

### 5.3 Voluntary standards

In the literature, there is a broad consensus that voluntary standards are ineffective measures to stimulate environmental improvement among SMEs. In practice, few SMEs adopt such measures (Masurel, 2007; Revell & Blackburn, 2007). Voluntary standards such as certification encourages advantage-driven and environment-driven enterprises to comply, as it may increase customer demand. But they have a high degree of environmental commitment and may thus already be prepared to meet the standards purely out of conviction and moral obligation (Ammenberg & Hjelm, 2003). Profit-driven and compliance-driven enterprises will not voluntarily adopt these interventions, because it is seen as an additional cost and they have a lack of commitment to the environment. Especially as not every SME will adopt these standards will result for them at a competitive disadvantage (Revell & Blackburn, 2007). They see market-driven forces as more persuasive to bring about environmental improvements than by means of the implementation of voluntary standards (Collins *et al.*, 2007; Revell & Blackburn, 2007; Mir & Feitelson, 2007). However, for companies there is no economic incentive to implement circular actions so far. Companies can be involved in the transition towards a circular economy in two ways: offering circular products or services on the market or by making circular improvements in the company's activities. Eurobarometer (2015) showed that the majority of SMEs in Europe (60%) do not offer green products or services and are not planning to do so. For a small minority who do (13%), these green products and services accounted for more than 75% of the annual turnover of SME. As for the rest, it contributed only a small proportion of their annual turnover. Furthermore, up to 87% of all European SMEs engage in at least one attempt to become more resource efficient. Of the undertaken actions, only two in five (42%) served the purpose of reducing the production costs of the SME. The lack of effectiveness has contributed to a decline in the number of SMEs who are willing to undertake resource efficiency actions (Eurobarometer, 2015). In addition, the greatest pressure for a business to change their business model is the pressure for change on the demand side (Wallace & Raingold, 2012). Eurobarometer (2014) showed that there is a gap between consumer's intentions and their actual actions regarding environmental improvements. Nearly all respondents (96%) support the rationale behind environmental improvement and see it as having a positive effect on the quality of life in their country (86%), economic growth (80%) and employment opportunities (78%). But what is remarkable, only one in three respondents (35%) buys a remanufactured product, one in four (27%) makes use of sharing schemes and at least one in five (21%) rent a product instead of buying it. These figures indicate that so far for companies, especially for compliance-driven and profit-driven enterprises, there is no economic incentive to implement circular actions.

The Circular Economy Package created two separate certifications:

- *European ECO-Management and Audit Scheme (EMAS)*

An EMAS registration ensures that a company or organization can prove to its customers, partners and regulators that it evaluates, manages and reduces its environmental impact of its activities. The EMAS logo can be used as a marketing tool that promotes the excellent environmental performance of a company (European Communities, 2011).

- *Environmental Technology Verification (ETV)*



ETV supports SMEs to sell their innovative environmental technologies on the economic market. At the end of the ETV process, an SME receives a 'Statement of Verification' which is a proof of that the performance claims are credible and scientifically sound (European Commission, 2016c).

#### **5.4 Financial support**

The shift to a circular economy requires innovative business models for which financial instruments are needed. Financial instruments can come in the form of subsidies, loans and tax concessions. SMEs have a smaller budget than large companies, making them more susceptible to additional financial costs. Their small budget ensures that it is important for them to know the upfront costs of investment and the expected time of return on investment. However, the estimated ex ante costs of a circular economic model can deviate much and therefore is a risky business for SMEs (Görlach *et al.*, 2006; Rizos *et al.*, 2015; Hollins, 2011). At least one in five of European SMEs (23%) indicate that the cost of environmental actions is the main barrier to the establishment of efficient use of resources (Eurobarometer, 2015). Also in the literature, one of the most frequently cited barrier to SMEs is the financing of green innovation and new circular business model (Artola & Genre, 2011; Rijksoverheid, 2014).

The various financial supports may each have a different impact on the type of SME. Mir (2008) discusses that profit-driven and compliance-driven SMEs are not likely to apply for a loan, because they will be concerned about paying it back. Tax concessions and subsidies cut costs and therefore these interventions will appeal to these enterprises most. A disadvantage of those is that when they are withdrawn, the profit-driven and compliance-driven SMEs will immediately return to their previous environmental-harmful practices (Carter, 2001). These interventions are only sustainable solutions for the transition towards the circular economy as it is directed at advantage-driven and environment-driven enterprises, because due to their environmental commitment, they will also maintain their environmental improvement when these interventions are discontinued.

Nevertheless, most public funding is focused on large enterprises (Studer, Welford & Hills, 2006; Calogirou *et al.*, 2010). A study carried out among businesses in the Netherlands shows that 44% of small enterprise that applied for a public loan is rejected, which is 15 to 20 percentage points higher than the average for all companies in the same period (Panteia, 2015a). Another option for SMEs is to receive funding from banks but also here larger companies have better access to finance compared to SMEs. The European Central Bank (2015) shows that during the period from April to September 2015, 30% of all European SMEs applied for a bank loan. Of this group, 65% were fully successful in their loan application and for 9% the request was rejected. Although the number of large companies applying for a bank loan almost equals that of SMEs (41%), the success rate of larger companies is much higher (83%) and the rejection rate much lower (1%). SMEs encounter difficulties in obtaining the required guarantees and collateral by the banks which makes it a risky business for banks and therefore are not willing to provide loans to them. Moreover, after the start of the euro crisis in 2007, banks have tightened their credit standards for loans to all companies. The proportion of tighter conditions have gradually decreased, but less for SMEs than for larger companies (Müller & Tunçer, 2013; Panteia, 2015b).

The Circular Economy Package created six subsidy programs which SMEs can apply for:

- *Horizon 2020*

Horizon 2020 is the biggest European funding program for research and innovation in business and academia. The new SME instrument supports high-potential SMEs to explore the feasibility and the commercial potential of ground-breaking eco-innovative ideas (European Commission, 2016d).

- *Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME)*

COSME supports SMEs in the areas of facilitating access to finance, supporting internationalization and access to markets, creating an environment favorable to competitiveness and encouraging an entrepreneurial culture (European Commission, 2016d).

- *Cohesion Policy*

Investments from the Cohesion Fund (CF), the European Regional Development Fund (ERDF) and the European Structural and Investment Funds (ESIF) help SMEs in the creation of new production processes, innovative technologies and supporting the efficient use of resources. The cohesion policy also aims to bridge the investment gap of waste management in the EU and supports the implementation of the waste management hierarchy (European Commission, 2015e).

- *Employment and Social Innovation program (EaSI)*

EaSI provides access to funding for social enterprises to test and evaluate ideas for reform from which the best will be scaled up in the Member States (European Commission, 2013c).

- *European Fund for Strategic Investment (EFSI)*

EFSI is launched jointly by the EIB Group (European Investment Bank (EIB) and the European Investment Fund) and the European Commission to accommodate circular economy projects which have medium to high risks potential. It aims to overcome the current investment gap in the EU (European Commission, 2015g). SMEs can also receive credits for innovative sustainable business models with high investment risks by InnovFin financing (European Investment Bank, 2016).

## **5.5 Environmental audits**

An environmental audit is a systematic and independent assessment of a sustainability policy. A third party visits SMEs to discuss the business practices and to identify opportunities for circular performance operations. In the literature, there is little attention paid to environmental audits as an incentive for environmental improvements. It is expected that advantage-driven and environment-driven SMEs will benefit from this intervention because they are proactive and want to remain so. Advantage-driven enterprises will be interested in gaining knowledge because it may give them ideas for innovation and therewith a competitive advantage. Environment-driven enterprises are open to all the knowledge that empowers them to persevere in their commitment to the environment (Simpson, Taylor & Barker, 2004). So they will take time to gain more and new knowledge about circular improvements. On the other side, profit-driven and compliance-driven enterprises will not perceive audits as useful instruments to stimulate environmental improvements, because of the prejudice that environmental improvement is expensive and they will not gain any benefits from it (AMEC & Bio Intelligence Service, 2013; Rademaekers, Asaad & Berg, 2011; Bradford & Fraser (2008). These interventions are seen by them as a waste of time. Also, compliance-driven enterprises do not have a strategic mindset and therefore do not need to gain more knowledge about the circular economy than what is necessarily to comply (Condon, 2004).

Walker & Brown (2004) and Condon (2004) both claim that environmental audits are only successful in cooperation with educational intervention. It increases awareness of the benefits of the circular economy for an SME which ultimately ensures that businesses are more open to environmental audits. SMEs often have little knowledge about the financial gains of the circular economy for their business, there is a prejudice that improving their resource efficiency is too expensive and they are unaware of the impact of their activities on the environment. In addition, many owner-managers are not aware of the urgency of the transition towards a circular economy for the environment and the European economy (AMEC & Bio Intelligence Service, 2013; Rademaekers, Asaad & Berg, 2011; Eurobarometer, 2015). Walker & Brown (2004) emphasize that educational programs may enhance the environmental commitment of these enterprises only when more emphasis is placed on the economic benefits of the transition to a circular business model for their business, instead of merely pointing out the benefits to the environment. In addition, in order to persuade profit-driven and compliance-driven enterprises there are examples of successful circular business models in the real world needed (Cook, Bhamra & Lemon, 2006). Although a number of important circular initiatives exists, for example Turntoo, the size of the success is still limited.

Educational program can thus ensure enterprises become more interested in environmental audits. This relationship between education and environmental audits suggests that the effectiveness of environmental audits will largely corresponded to those of the educational interventions. As previously discussed, profit-driven and compliance-driven enterprises are only willing to adopt environmental audits if they have the economic knowledge why this will benefit them, while advantage-driven and environment-driven enterprises are in favor of environment audits because it will confirm their environmental commitment.

## **5.6 Business advice**

The circular economy requires knowledge of new technical skills that are not yet widely available, such as knowledge of circular design which allows to reuse or recycle products easily. Increased technical skills makes it possible to think beyond the existing framework, but many SMEs do not have the technical skills to identify, asses and implement new advanced technical operations that reduce the environmental impact of the company (Rademaekers, Asaad & Berg, 2011; Trianni & Cagno, 2012). Due to their lack of knowledge and/or technical skills, SMEs are highly dependent on advice of third parties about how they can make the transition to a circular business model. In the literature business advice is seen as an important stimulus to help SMEs with problems or questions that they face when they act in the circular economy (Rademaekers, Asaad & Berg, 2011). This is particularly true for profit-driven and compliance-driven firms, because due to their lack of environmental commitment, they will quickly lose interest in circular initiatives if they encounter an obstacle (Vernon *et al.*, 2003). Business advice should be easy to obtain and at low cost. It is also unlikely that compliance-driven and profit-driven enterprises themselves will look for business advice on how to change to a circular business model. Therefore, it is important that the support services and environmental advisers actively promote themselves with these enterprises. Business advice would be most effective for advantage-driven and environment-driven enterprises, because they will actively seek for business advice to enhance their engagement in the circular economy.

The Circular Economy Package created two advise platforms:

- *European Resource Efficiency Excellence Centre*

This virtual Centre supports SMEs with practical information and advice on how to improve their resource efficiency in a cost-effective manner (European Commission, 2014b).

- *European Investment Advisory Hub (EIAH)*

The EIAH is a joint initiative by the EIB and the European Commission with as aim to offer a single access point of technical support and tailored advice to investment projects relevant to the circular economy. The EIAH gives financial advice to companies as well advice on market studies and sector strategies (European Investment Bank, 2015).

## **5.7 Conclusion**

Compulsory regulations and financial penalties are coercive strategies by the government to enforce actors to comply with the circular policy. These measures reflect the school of thought of the enforcement theorists. Compulsory regulations and financial penalties will be most effective for the compliance-driven and profit-driven enterprises because they will not comply with the circular policy due to ignorance than because they do not have the capacity to do so. They are rational actors that weigh the costs and benefits of alternative behavioral choices when deciding to comply. Governments have to establish an incentive structure in which the advantages of the implementation of circular principles exceeds the cost of not doing it. If there is not an (financial) incentive to comply, they will not do so.

Voluntary standards, financial support, environment audits and business advice help actors with capacity-building so that they can comply with the policy. The management theorists argue that actors are willing to comply, but just do not have the capacity to do so. The advantage-driven and environment-driven enterprises are willing to comply with circular policies but may not have the capacity to comply. Furthermore, the literature showed that SMEs encounter obstacles in the implementation of a circular business model. The government has to help these actors to overcome these barriers.

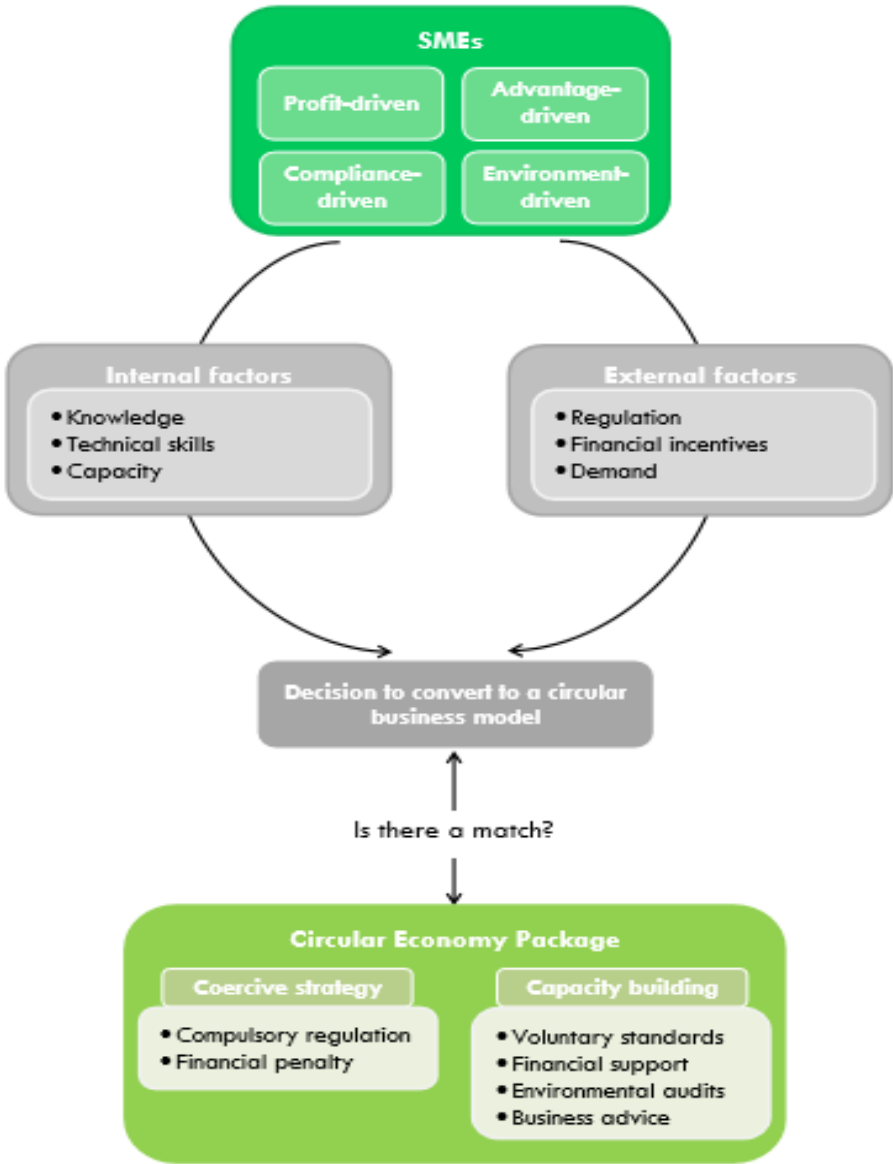
# 6 Hypotheses

This chapter focuses on the process of the research strategy and methods used in this study. The first part presents the integrated research model and subsequently the hypotheses of this study are developed. The second part discusses the process of the methods used to analyze the data from the survey and the in-depth interviews.

## 6.1 Integrated research model and hypotheses

From the literature review an integrated research model has been constructed that shows the main concepts and relations of this study (figure 2). The relations are reflected in six hypotheses. Through these hypotheses, the sub-questions and the research question of this study can be examined and answered.

Figure 2: The integrated research model.



The aim of this study is to evaluate whether the needs of SMEs which undertake circular actions are in line with the support mechanisms provided by the EU Circular Economy Package. The support mechanisms are fixed, but the need of support by SMEs can be examined by means of the theory. Below, six hypotheses are stated which reflect the expected support mechanisms SMEs need to support the transition towards the circular economy. The hypotheses are:

1. *Compulsory regulations are effective for profit-driven enterprises in order to encourage them to make the transition towards the circular economy.*  
Profit-driven enterprises will not change to circular business models if the costs of circular activities exceed the costs of non-circular activities. Compulsory regulation is supported by the explicit threat of punishment for non-compliance to ensure that the cost of non-circular activities exceed the cost of circular activities. However, all SMEs will have difficulties with the administrative burden that environmental legislation entails.
2. *Financial penalties are effective for profit-driven and compliance-driven enterprises.*  
Financial penalties ensure profit-driven and compliance-driven enterprises comply with circular requirements, because not doing is costly and will thus have a negative impact on their competitiveness. The advantage-driven and environment-driven enterprises are in favor of this intervention because it makes environmental harm more visible than the 'command and control' type of compulsory regulations.
3. *Voluntary standards are effective for advantage-driven and environment-driven enterprises.*  
Voluntary standards encourage advantage-driven and environment-driven enterprises to comply, as it may increase customer demand. Profit-driven and compliance-driven enterprises will not voluntarily adopt these interventions, because it is seen as expensive and does not provide economic benefits for them. The Circular Economy Package created two certifications and it is expected that only advantage-driven and environment-driven SMEs will use.
4. *Financial support is effective for all types of SMEs.*  
It is unlikely that profit-driven and compliance-driven SMEs will apply for a loan, but they are in favor of tax concessions and subsidies because it provides permanent cost reduction. Advantage-driven and environment-driven enterprises are also in favor of financial support. The Circular Economy Package created six subsidy programs which SMEs can apply for, and it is expected they are appreciated by all SMEs.
5. *Environmental audits are effective for advantage-driven and environment-driven enterprises.*  
Advantage-driven and environment-driven SMEs are willing to spend time on environmental audits, since it may improve their environmental commitment. Profit-driven and compliance-driven SMEs see environmental improvements as expensive and that they will not gain any benefits from it. If environmental audits will provide more information on the economic benefits of the circular economy for an SME, they may get interested in environmental audits.
6. *Business advice would be effective for advantage-driven and environment-driven enterprises.*  
Advantage-driven and environment-driven SMEs will actively seek for business advice to enhance their engagement in the circular economy. Profit-driven and compliance-driven SMEs will not do this voluntarily, because to their low environmental commitment. They will be open only for this intervention when it is easy to obtain and inexpensive.

## 7 Results

The results of the survey and the in-depth interviews are presented in this chapter. First the results of the survey will be explored in order to gain insight into the general pattern of the knowledge and the use of SMEs of European support mechanisms by SMEs in Amsterdam. The survey is in Dutch and is based on the findings of the literature review and the European Circular Economy Package (appendix A). It exists of three parts: general information, external support and the knowledge of European support mechanisms. The questions were both closed and open-ended. The definition of an SME, only the staff headcount is taken into account. This is because the annual turnover and the balance sheet total are sensitive issues and SMEs will not easily share this information. Unfortunately, there is no data available about SMEs that are engaging in the circular economy which are located in Amsterdam. Therefore, the population has to be found through mouth-to-mouth information or by searching on the internet. The survey was sent to 75 SMEs that are found on the websites of Fab City 2016, Nederland Circulair! and MVO Nederland, and the survey is published in the newsletter of MKB-Amsterdam. Eventually, the survey had 20 respondents, of which 13 belonged to the population. This number is too low to draw generalized conclusions about all SMEs in Amsterdam or even in the EU. This ensures that this study cannot draw general conclusions about all circular SMEs in Amsterdam, but only about the SMEs interviewed. Nonetheless, the survey can be seen as an indication of whether SMEs who are engaging in the circular economy getting external support and whether this group has knowledge about the Circular Economy Package.

The results of the interviews are presented in the second part. The case study analysis encompasses semi-structured interviews and this forms now the main body of this study. The cases were selected from the data provided by the survey. Eight respondents were willing to be interviewed. During the interviews, four names of SMEs that work with the circular principles were mentioned. These are approached for an interview and this provides that a total of twelve people SMEs interviewed for this study (appendix B). The interviews were conducted with the owner-managers or with the environmental manager. The interviews were held in Dutch, because the mother tongue of all the interviewees is Dutch and it is assumed that they feel more at ease and can express themselves better in their mother tongue. As a consequence that the quotes of the interviewee must be translated into English and thereby possible a lost in translation occurs. The interviews were face-to-face or conducted by telephone, what was up to the preference of the interviewee, and they lasted approximately forty minutes each.

An 'interview guide' which was based on the literature review and the results of the survey was prepared for guidance during the interviews (appendix C). This is a list of topics and questions that have to be covered during the interview. Creating a basic structure for the interviews enables that the interviews can be compared and simultaneously still leaves sufficient room to explore interesting side paths during the interviews. It is assumed that the respondent will name their biggest obstacles first. If the respondent did not mention obstacles or needs from the literature, at the end of the answer, the respondents were asked if he encountered those other obstacles.

The results of the interviews are categorized according to the drivers, the barriers of engaging in the circular economy, the need of external support and the opinion about the support mechanisms articulated in the Circular Economy Package. As the hypotheses reflect the need for support mechanisms, these will be validated in the final section of this chapter. In order to

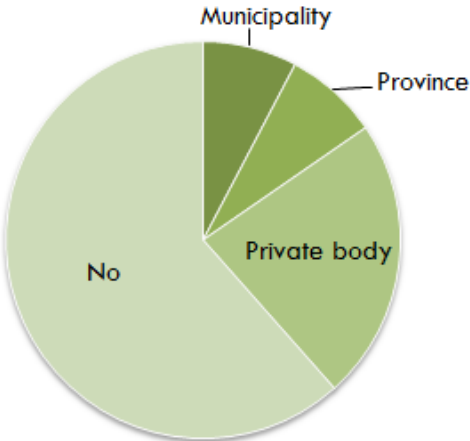
understand the views of the SMEs about the support mechanisms, the first section provides the required context about the mentality and struggles of SMEs that are trying to convert to a circular business model.

**7.1 Exploring the circular SMEs**

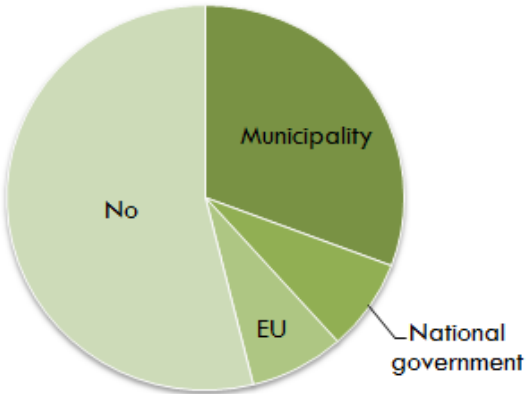
Respondents were asked if they got external support, which can be financial or organizational aid, to conduct their circular activities (figure 4). Five of the 13 respondents responded they did get external support. The majority received the external support from a private body, while one respondent got external support from the municipality and one respondent from the province. The support from a public body were both financial support, while the support from a private body were financial and organizational support.

Respondents were asked whether they consider the existing public support for circular business to be enough (figure 5). The majority of the respondents share the opinion that there is enough public support for their company to undertake circular actions, with which they mainly referred to financial support. The majority of the respondents who want more external support feel the support has to come from the municipality. The reason for this is that the municipal level is closer to SMEs than the other levels. Respondents especially want better access to financial support.

**Figure 4: Is your company receiving or has it received external support for acting in a circular manner? If yes, from which body did you receive external support?**



**Figure 5: Do you think there is a lack of public support for your business to undertake circular action? If yes, from which level do you think the support should come?**



Nine of the 13 respondents were not aware that the European Commission has adopted the Circular Economy Package (figure 6). The respondents who were aware of the Circular Economy Package were all consultancy firms and three of the four of them are of the opinion that there is no shortage of public support to undertake circular activities. The European support instrument which they were all familiar with is Horizon 2020 and they were the least familiar with the EU Program for Employment and Social Innovation (EaSI). Even though they have knowledge about



European support mechanisms to enhance circular activity, not one of them has actually made use of a European support mechanism.

**Figure 6: Did you know that the European Commission has adopted a Circular Economy Package on December 2, 2015?**



Below, the results of the in-depth interviews will be elaborated upon.

**7.2 Drivers**

*‘Recently there was a television documentary that was quite interesting. A blind woman, who had had the opportunity to do all kind of studies, discovered that a lot of blind children in Nepal are who are marginalized. She started a school for blind children over there and later in Kenya and many other places too. She is not even thirty yet. Her husband, a Dutchman, was asked why they have such lofty ambitions. Then he replied: ‘If you have lofty ambitions then all the obstacles that you encounter are only thresholds which are easy to overcome. If your ambitions are too low, you only see obstacles that cannot be overcome, so you will stop’. In my opinion the same applies for the circular economy: if you make your ambition too small, the obstacles are insurmountable, but if you put down a firm ambition than many of the supposed obstacles are easy to solve’ (case 2).*

It is important to understand what drives an SME to undertake circular actions in order to figure out what for type of SME it is. All respondents were clear that their biggest drive is their personal conviction. *‘This company is originated from the conviction that it is a shame what is being discarded. Therefore, we became a foundation first. We want to raise awareness among customers about what is thrown away’ (case 5).* Case 10 also saw the need to change things in practice: *‘We saw many municipalities throwing away a lot where it concerns street furniture. I can get a request that five bicycle gates should be discarded and the next day I get an application in which the same bike fences are requested again. Additionally, for example park benches, they are poorly kept, sometimes they are recycled a bit but mostly discarded eventually. We found it quite extraordinary that so little is done with this. The market is really traditional. Our idea is that more should be done in a smarter way’.* It is not believed that entrepreneurs start a business with circular principles based purely on economic grounds. A grant consultant who often works with SMEs in this area says: *‘I have never had a client who does it purely out of economic motives’ (case 9).* Another consultancy agency: *‘This branch is not economically interesting for SMEs. I am 100% sure that*

companies start with the circular economy from a personal need. It is hard to earn a living in this area, so if you do it is because you are very clever, and then you were also able to work in any other industry. However, you chose this branch for yourself because of personal involvement' (case 8). The interviewed SMEs have a strong personal belief in making environmental improvements which is not driven by financial goals. This clearly shows that they are environment-driven enterprises.

### **7.3 Obstacles**

To comprehend the need for public support for these SMEs, it is important to first understand what obstacles they have experienced and are still experiencing in order to undertake circular actions. Below these obstacles will be discussed.

#### *7.3.1 Ruling structure*

The ruling structure refers to the internal structure of a company as well as the external contextual structure. People have taught themselves certain thinking patterns that create prejudices about change. These prejudices arise from unfamiliarity. Case 2 addresses this: *'The biggest obstacle is the existence of alleged prejudices. The circular economy is perceived as a risk. This obstacle of unfamiliarity is reflected in culture, structure and technology. In the culture we think we do enough good things already and we recycle almost everything. The unfamiliarity of the structure is reflected as organizations come in revolt against the circular form of transactions which competes with the current structure. The circular economy also has major consequences for product and service design. All products are slightly upgraded every time, but fundamentally redesign is a major new step. Technicians are open to this change, but they have to wait for permission from above. Once again, there is prejudice against change. As long as their current business model runs, why change it? Unfamiliarity and prejudice keeps coming back. What needs to happen is breaking out of the normal thinking patterns by opening people's eyes. You have to stretch the thinking pattern. It is a maturation process'*. As long as you can earn money with your traditional approach then there is no motivation to transit to a circular business model. *'We are pretty spoiled with perfect products, so people do not easily switch to other products whose qualities are not yet guaranteed'* (case 3). The traditional thinking patterns ensure people are narrow minded. *'The biggest obstacles are the lines of thought that we have taught ourselves the last forty years. It is often thought that it is not allowed in Brussels, because someone thinks he has read it somewhere. But if you read the laws carefully than it can be treated in different ways. The proposed interpretation of the legal legislation is an impediment. It is mainly one's own inability and one's fear to rely on its own rationality. It is a rare occurrence that I encounter an obstacle that I think is a serious handicap for undertaking circular actions'* (case 11). But even when an entrepreneur is convinced of the circular economy, still dominant patterns can stop the transition of the company to the circular economy. Case 6 shows that the internal structure of his company counteracts changes towards the circular economy: *'We are an association of the established order. We represent the vested interests and not the new interests, because they are not members yet. This is inherent to an association. I have to move within an existing situation'*.

In addition to internal structure barriers, there are also external structure obstacles. Case 4 names a big obstacle to start circular projects: *'The municipality [of Amsterdam] has a huge stake in the AEB [the waste-to-energy company of the city Amsterdam]. The waste collection in Amsterdam is done by the AEB. Who collects what and where is specified in contracts. This is a solid*

construction which is difficult to get through'. Also case 10 encounters difficulties to undertake circular actions due to the structure of the municipality: *'In order to create a circular business model you have to take several things into account. For example, we want to use people with poor job prospects in our company. Therefore, we must draw up a contract. A department within the municipality finds it very interesting, but we have to go to another department because it is not in their budget. This does not happen only at one thing. There are many different departments within a municipality and they do not communicate with each other in any way. These are completely separate worlds, and they do not worry about that at all. It is not like they are going to organize a meeting to bring all the parties together, because they do not have money and time for that. This makes it very difficult to start a circular business. It does not only occur at the level of the municipality, but it also applies to higher policy levels. 'Perhaps the biggest obstacle is that the European policy and the Dutch policy too are primarily designed for large companies. In the Netherlands we have 1,1 million businesses and of those only 55,000 enterprises are larger than ten employees. The number of companies with more than 25 employees are half of that and so it goes on. The government should really begin to wonder how small businesses can be helped. Now issues such as sustainability have to be a personal love of the entrepreneur if it is going to play a role in its business. It is much more difficult to reach SMEs, but at the same time it is much more important'* (case 6).

### 7.3.2 A lot of talking, little action

Almost all respondents felt frustration over the government – this applies to every level of government – as they claim that they will boost the circular economy, but is not reflected in practice. *'One obstacle is the fact that there is a lot of talking, but little is done. We all shout very loud in the Netherlands, but it is largely window dressing. We do not take the step of talking to doing. Because of this the forerunners still have to encounter many restrictions'*, says case 10, and case 1 and case 9 said the same. *'You cannot say "here you have money, but we continue to act linear". You have to practice what you preach'* (case 4). There is particular critique on the municipality. *'The council of Amsterdam has said that the municipality want to procure fully circular in 2030, but their current procurement does not indicate this. They also say that 100% sustainable procurement is already mandatory, but this is also not the case. There is no oversight over the municipality on whether they actually do what they say. It may sound frustrated, but it is just reality. It is just absolutely not reflected in practice'* (case 10). Also case 3 and case 4 are dissatisfied with the actions of the municipality so far: *'Municipality of Amsterdam has written a report stating that they will focus on two distinct processes: creating awareness among residents and building an after separation plant by the AEB. I find this killing because it is so contradictory. This is diametrically opposed to each other: they want to make people aware of why waste separation is important, but they also give a signal that if people do not separate their waste they will have a system that will do it for them. Why would you still go to separate you waste?'* (case 4).

The respondents mainly criticize the municipality, because they are only aware of the policies implemented at the municipal level. Eight of the twelve respondents were not aware that there is a European policy on the circular economy. The four respondents who were aware of the support mechanisms provided by the EU do not make use of it, this will be further elaborated on below.

### 7.3.3 Ambiguous definition

*'The municipality of Amsterdam is aiming for sustainable, but they do not show it in practice. This also has to do with that the circular economy is such a broad term. You may claim you want to become a circular hotspot, but what does that mean?'* (case 4). Not only governments, scientists and consumers have no clear understanding of what the circular economy entails, even the SMEs that undertake circular action do not have a consistent understanding of the circular economy. *'The circular economy is something that everyone does, and at the same time that no one does. The same as sustainability, it is a very vague concept. Before you know it you are doing something with it'*, said consultant case 8. The longer case 3 is working in this branch, the more ambiguous the concept for him becomes: *'In the beginning I knew better what circular means. I have talked with a lot of people about it and the concept becomes more and more vague for me'*.

According to case 10, the circular part is *'the extension of the product life. In order to extend the product life, you should not use too many different components and materials should be easy to pull apart. The next step may be instead of a bench with a wooden seat they will be using bio waste material'*. According to case 7, the circular economy is much more about resources than the desire to extend the product life: *'For me, the circular economy is to deal as efficient as possible with commodities. Ultimately the largest possible share of your production should be taken back and be re-introduced into the economic market with an acceptable and meaningful sustainable application'*. Case 3 also emphasizes the preservation of raw materials: *'The circular economy ensures waste is no longer seen as waste but as a resource. For example, brewers can brew beer of old bread that would otherwise be discarded'*. Case 2 does not agree at all with this definition: *'If a baker delivers his old bread to a brewery, he does not have to be circular. That is just to ensure that the optimum use is made of all flows which enter and go out of the bakery. If you can convert the waste stream of old bread into a valuable stream of malt for the brewery, then you are smart'*. Case 4 also does not believe that the circular economy is defined as the use of a waste stream: *'The fallacy a lot of people make is that you focus on one element, such as waste. If you can turn 100% of your waste into commodities it does not mean you are acting circular, because there is also the input and the procurement of your company. It is about adding value to many factors: to the people, to the buildings, to the neighborhood, to everything. And not just on one element, but everywhere'*. Case 6 regards the circular economy as a sub-area of sustainability: *'Sustainability and the circular economy have many similarities. The same as sustainability, you also have to think about the usage of things and whether it can be reused, and so. To me, the definition of circular economy is still very vague. Vaguer than the terms sustainability and cradle-to-cradle. Ultimately, it is about the action perspective, and that was clearer in the other terms. But these are all elements of the same'*. Case 2 says: *'He [case 6] has not understood the concept of circular economy. Sustainability and circular economy are two different things. Sustainability is driven by ideology about how a better world with an ecological toned lifestyle looks like. The circular economy is about economics and not about ideologies. It is other types of business models that have a huge effect on how our system works. The point is, sales of products have to be based on performance. The baker has to learn that he should not buy his equipment's, but has to ask for the performance he wants, for example, thousands of kilos of leavened dough'*.

There is no clear definition of which activities could be defined as circular or not. What is certain, *'for the debate there have to come clear definitions of circular economy'* (case 8).

#### 7.3.4 Funding

*'To be able to scale up from a model to production, financial buffers are needed'* (case 9). Case 2 shows that the financing of a circular business model entails difficulties which cannot be borne by most SMEs: *'A totally different funding base is needed for circular businesses because they are not paid for a product on the spot anymore, but be paid via a usage contract for a period of 5 years. In the Netherlands there are not many companies who have so much capital that they can bear that risk themselves. The investment decision of investors, banks and pension funds are made on the basis of a classical risk analysis. The classic risk analysis sees dozens risks herein, making it not easy to get funding for SMEs'* (case 2). Case 3 argues that funding is needed for companies who are just starting engaging in the circular economy: *'A company has to do quite a lot of research in order to establish a circular product, as it is unsure whether the product will be successful. You want therefore cover a certain risk'*. Case 10 also indicates that it is difficult as a circular company to obtain private funding: *'SMEs should mainly finance their business from their own resources. Investments by banks in the circular economy is very limited. Here too, it is almost only window dressing'*. There is also a great distrust towards the government when it comes to subsidies. This ensures that SMEs do not want to be dependent on subsidies. *'It is also true, if we are honest, that governments are relatively unreliable in terms of things like that. What is promised in subsidies today may not be there tomorrow. It happens that subsidies, but also tax measures such as energy saving measures, are withdrawn or are changed a lot. As a company you want to go for certainty, but a) it is not certain whether you will get the grant, and b) if you get it, does it remain? Furthermore, for example, there is an energy subsidy which is roughly twice oversubscribed every time, due to that large companies have announced massive projects. The projects are ultimately not realized, but the seizure of the subsidy fund disappears and does not return to the subsidy fund. This all keeps many people from making use of such arrangements'* (case 10). There is also a distrust towards the government due to the fact that a company and the government have different interests concerning the purpose of the money: *'The government believes that public money should benefit the whole society. So the knowledge you gain from the projects that are financed with public money should be shared. An SME disagrees and says: 'No way, if I release information about the chairs than my competitors will sell the same chairs the next day'. The interest of the entrepreneur to hold his own product secrecy undermines the interest of the government who believes that knowledge acquired with public money should be public'* (case 11).

Even when SMEs try to claim a subsidy program from the government, they are dissatisfied with the process. *'This financial assistance is there, but how do you get that money in practice?'* (case 9). The problems already start at figuring out which subsidies best suit your business. *'If you are interested in a grant you want to know immediately the three most important criteria on which you can decide whether you meet them or not. It is as if the government publishes a report in which they start with thousands of pages and attachments, and somewhere in between you have to find a summary for yourself. Reading this takes a lot of time, and then there is still the question whether you fit in this program or not. That is all wrong. I see information as a pyramid: it begins with a title and below perhaps a slightly longer subtitle, below that a longer sentence and below that a short paragraph. This way, you can expand it. On the way down the whole story can come with references and this all in ordinary human language. When you talk to your neighbor, who is an entrepreneur, at a party, would you speak to him in this government language? You can only achieve things if you do appeal to your target audience. It has become a bit better already,*

but it is still not written from the applicant's perspective' (case 9). 'In any case, to write such a text bearing in mind the entrepreneur. That would be a major step forward' (case 11).

Requesting and obtaining a grant is so complex and surrounded with so many uncertainties and such complexity that it is no longer feasible for SMEs to apply. 'By the time you get the grant you have invested so much time and energy that it is just not worth it. A grant applicant must fulfill so many requirements. For example, often you must demonstrate that you have already invested so much money in order to get a bit of extra funding. If you can get €30,000 in funding for a project, you must show that you have invested €70,000 already. Then you go to ask yourself whether you want to invest the €70,000 or whether you may achieve your goal by investing €20,000 and look how far we can get' (case 7). Case 12 also finds that 'the criteria of the subsidies are arbitrary and do not make sense'. This ensures it has become a very frustrating thing for SMEs: 'To qualify for the European Regional Development Fund you have to work with partners. With twelve parties we promise that we will do something cool with €500,000 the next four years. It seems a lot of money, but it costs a lot of money to operate this entire structure and eventually you must also distribute the remaining money over twelve parties. We spend more time and money on all the meetings we need to have than we get from the grant. I am seriously doubting whether I will apply for another subsidy program ever, because there is a high probability that it will be a similar kind of messy' (case 11). Even when an SME gets the funding you need to track everything in the process which ensures great costs. Obtaining funding also brings high administrative burdens and SMEs do not have the time and the capacity for that. 'Nine of the ten cases it is a hell of a job to fill out an application and to maintain it. For that you could have set up an entire administration office' (case 10). This administrative burden of subsidies even allows for some SMEs to abandon a full circular business model: 'You have to register everything. It is relatively such a hassle that it is almost impossible to do for an SME. The circular economy is not a very capital intensive industry already, and this process ensures that the costs rise even faster. If someone has to spend half an hour a month on my jeans, then it is not cost effective. He should devote half a minute or even half a second to each jeans. There is a discrepancy between the amount of money the subsidy generates, and the effort you have to do to get it. Therefore, Mud Jeans is back to some sort of a deposit model' (case 2). And then you have only a small chance of getting the grant: 'We asked RVO [Netherlands Enterprise Agency] for which grants we would qualify. Then you hear that only 5% of the applications is honored. An SME is not going to spend three months of his time on this if he knows that these are his chances. The format of a grant application and the character and capacity of an SME clash enormously' (case 11).

Even consultants advise SMEs to not apply for European subsidies, because 'they will waste their time' (case 12). According to consultant case 2, and acknowledged by four of the other respondents: 'The administrative burden is far above the yield. A lot is happening at the European level, but I am not very enthusiastic about it yet. This is because a), I never have succeeded to get anything from Europe. As soon as you apply for a grant for a more process oriented project you can forget it, while the circular economy is process-oriented. And b), I think the demands are too high. In addition, the daily rate of Dutch consultancy is already a problem. Our rate is too high and the European reimbursements are too low. As a result, you often have mediocrity in the European projects. In my opinion, Europe is totally inaccessible'. Also consultant case 9 does not think that European funds are suitable for SMEs: 'I think that large firms benefit more from grants than small businesses. It takes a lot of work to apply for funding and the success rate is too low. It is just too

risky for an SME to invest a lot of money and time in it. For Philips it is easier than for an SME' (case 9).

### 7.3.5 Different mindsets

The SMEs indicate that there is a difference in mindset between an entrepreneur and the government. Case 11 explains it well: *'An entrepreneur and the government are in different layers: one seeks freedom and the other wants control. This is always a mismatch and therefore always results in frustration'*. The same is said by case 6: *'The government always tries to have traction. This is not surprising, because the government obviously has many responsibilities. However, this control ensures that things take a lot of time and therefore causes delays. Entrepreneurs do not like delays. They want to do their own thing between the appointed frames'*. These difference in mindsets ensures that the civil services do not understand how SMEs work and think: *'There are councilors who understand SMEs, but as a rule, municipalities and the entire civil service does not have a clear picture of SMEs. Also municipalities operate mainly from a policy view and thinks that SMEs do the same thing. For SMEs acting is the most important aspect, not thinking. Go out and go to work'* (case 6).

The entrepreneurial mindset is also the belief that your business should not be dependent on subsidies: *'Many companies do not want subsidies, because that does not suit with entrepreneurship'* (case 9). This has to do with that if your business depends on subsidies then you have no good business case: *'If you want to create something permanent it has also to work without subsidy. We do not want to become grant consumers, the contrary, we want to show that money can be earned with circular products. Then it also becomes interesting for other entrepreneurs to step into this branch'* (case 10). The same entrepreneurial mentality applies to case 3 and case 5: *'We want to be a normal restaurant and keep ourselves standing without being dependent on donations or grants. If that fails, then we are not doing well enough. A good idea should be able to stand on its own'* (case 5). What is striking is that this mindset also not recognized by the consultants.

## 7.4 Needs of SMEs

The respondents are in agreement that the government at every level should play a role in the transition towards the circular economy. SMEs have a different opinion about the size of this role. On the one hand, some of the respondents are of the opinion that the (European) government should play an important role in the transition towards the circular economy, because it serves everyone on earth: *'I play a part in the transition that actually lies with the government. I invent a wheel that is going to help a lot of other people too. I think it is fair if governments provide a helping hand in this'* (case 11). Case 6 even specifies it to the European government: *'The transition is a global challenge. Since it is a global challenge, I believe that the EU should have a significant role in this matter'* (case 6). Case 3 and case 11 agrees: *'I personally think that the circular economy should be stimulated by Europe or by the national government. The foundation transcends the regional interests, because we try to establish an infrastructure where the whole world can profit from. This should also include as large as possible policy format'* (case 11). Case 1 and case 9 want a circular economy policy at the EU level in particular because the EU is able to establish partnerships within the EU: *'You can then create good partnerships for all waste streams. It will be much more efficient'* (case 1). Also, *'suppose you have created something and a Spanish company wants to do something too with your product. This requires some kind of coordination'* (case 9).

Case 7 is of the opinion that the legislation on the circular economy will eventually have to come from the European level due to prevent distortions of competition: *'Ultimately, we are in a gigantic open economy and we have to compete with our products on a European market. It has very limited impact on pure national level. Which does not mean that the national level should nothing do, because as country you can get a lead position in the EU what is really attractive'* (case 7).

On the other hand, there are also SMEs who have less confidence that the (European) government will play an important role in the transition. *'Companies are already so far ahead in their thinking compared to the government, so the society and businesses should encourage the transition towards the circular economy. It will not come from the government. For example, renewable energy, this is an area where you see that the government is lagging behind and a lot of people and businesses think action should be taken'* (case 5). *'I do not think it should necessarily come from the government. A single policy officer says 'ooh, the circular economy!' and then the rest of the ministry says: 'It is not possible, it is not allowed, etc.'. I have no confidence in the government. Therefore, I do not think they should do more, but I do think they could do it differently'* (case 11). Case 2 prefers a strong European policy, but has not much confidence in it: *'I would love it if a strong circular project would be realized from Europe, but I do not see it happening'*. The same applies to case 10: *'As for us would it already be a big step if a strong circular policy will be established at the national level. European level is a bridge too far. I think it can happen once, but it would be much more feasible at the European level when there are good examples of circular business cases. At the moment you can demonstrate that it is functioning and with some adjustments it may also operate in other countries, then it becomes interesting to lift it to the European level'*.

#### 7.4.1 Demand

What was most evident was the strong demand from SMEs *'to increase the empowerment of the economy in the circular direction. This means creating good growing conditions. That is a playing field where governments have very little experience with. The government has been particularly concerned with monitoring and enforcement and too little with empowerment'* (case 2). The governments have to create demand for circular products and services because *'SMEs do not have the need to act according to the circular principles. I do not believe in this. So you have to create a need and the current instruments are not focused on it'* (case 8). Here it is noticeable that the SMEs do not believe in a coercive strategy to stimulate the transition to a circular economy, but rather consider an approach to capacity-building. They believe that SMEs are willing to make the transition, but by the lack of an economic market, they are not capable to change. The respondents indicated two measures which have to be implemented by the governments in order to stimulate the demand for circular products or services:

1. There should be price incentives for businesses and consumers to undertake circular activities. The price incentives have to make it attractive to produce circular and purchase circular products and services. This creates demand for circular products and therefore is a huge boost for the circular economy. An example of a price incentive are tax benefits. Case 2, case 8 and case 12 agree that there has to come a shift from taxes on labor to taxes on materials or extracted value: *'An important part of the tax is now focused on labor, while lots of labor is needed to keep raw materials in circulation. At the moment there is no positive or negative incentive from the regulations to maintain these*



resources for the economy. As a result, they can just as well be thrown into the waste disposal system rather than doing something else with it. A little side note is that we have to think of how we are going to do it. This change in the tax system would be a great incentive for circular models to function more easily' (case 2). Environment-driven enterprises see tax concessions as an effective tool to stimulate circular business activities. It ensures that non-circular activities become more expensive than circular-activities and enterprises are more likely to choose to act in a circular way.

Opinions differ whether non-circular activities have to be discouraged. Case 3 and case 12 are proponents for the discouragement of non-circular activities: 'If you have a lot of negative impact on the environment and the society, you have to be taxed' (case 3). Case 8 agree that financial penalties are effective interventions and especially for enterprises who need an economic incentive to change their behavior as profit-driven and compliance-driven enterprises: 'What you do not want as a society has to be clear. Legislation should be in such a way that there is no possibility to dispose of your waste easily. That should be very expensive and at the moment this is still too cheap. Legislation should ensure that wrong behavior is very costly and then there is an incentive to behave differently'. Case 2, however, says: 'That is a very old fashioned way of looking at the role of governments. Then you also get dictatorial tendencies of the government, 'we know what is good for you'. We do not like these directive regulations anymore'. The same goes for case 10: 'I do not believe in punishment or enforcement. I think there is an opportunity in making it attractive for people to act in a circular way. An example are electric cars. It is made fiscally attractive to drive an electric car rather than that it is made very expensive to drive a non-electric car. I am in favor of making the direction you want to go attractive'. Both case 2 and case 10 do not believe that a coercive strategy is an effective manner to stimulate the transition towards the circular economy.

2. The procurement policy of the governments should become circular. 'All municipalities, counties and Member States together do 20% of procurement in Europe' (case 12). 'All companies can still provide chairs, but the company with a circular business model is going to do it. So everyone is encouraged to start thinking about circular business models' (case 2). Also according to case 11 this puts much more grist to the mill: 'The Dutch government procurement amounts to nearly sixty billion euros per year. If a large part will be tendered on bases of the circular principles that will put the political world upside down. That will work a hundred times better than 25 advertising campaigns. As long as a company still thinks he gets away with doing nothing, then nothing will change. If someone misses an order because he does not meet the circular principles, he will scratch his head and start to think about how he is going to fix this'.

Traditionally, governments are engaged in monitoring and enforcement for the purpose of compliance with their policy by actors. The SMEs are not in favor of these coercive strategies anymore. They believe that governments should focus on creating an economic market for circular products and services in order for SMEs to get a positive incentive to change their business model. Hypothesis 1 of 'compulsory regulations are effective for profit-driven enterprises' is rejected because compulsory regulations are seen as an ineffective intervention to encourage SMEs to make the transition to the circular economy.

Even though all respondents were against coercive interventions by the government, some SMEs were in favor of financial penalties. They see financial penalties as effective interventions, especially for enterprises who need an economic incentive to change their behavior. However, it also got a lot of opposition because other SMEs do not believe in punishing non-circular behavior but rather in encouraging circular behavior. So hypothesis 2 is partly confirmed as SMEs do see financial penalties as an effective intervention to ensure profit-driven and compliance-driven SMEs undertake circular actions. But this idea is not supported by all SMEs.

All SMEs did agree that giving tax concessions is an effective means to stimulate circular activities by SMEs and therewith a part of hypothesis 4 is confirmed. The government must ensure that raw materials are taxed and labor not, what today is the reverse. This section touched only on one element that concern hypothesis 4 'financial support is effective for all types of SMEs', which is tax concessions. Further elements of financial support concern subsidies which will explore in the next section.

#### 7.4.2 Subsidy program

The previous section touched only on one element, tax concessions, that concern hypothesis 4. Further elements of financial support concern subsidies. The malfunction of the funding programs for SMEs can be solved in different ways. The first solution is *'to increase the budget drastically so that more SMEs can benefit from the public expenses and therefore less complex conditions have to be set. However, the lobbyist of the Circular Economy Package said immediately thereafter that this will be very difficult to achieve because the budget would have to be in fivefold. However, this will affect the entire EU budget'* (case 12). The second solution is to *'create a European crowdfunding platform for only sustainable initiatives. First, the government must make a selection of projects that fit within the framework of the policy. Then crowd funding will start: the government finances half and the remainder must be raised by the public. Then you have some sort of control, because if the other half will not be raised, then apparently the public has no confidence in the project. The investment from the fund will be canceled too. In this model the control is automated and you may even say that a small percentage of the investment by the government will return to the government. I have not encountered this kind of methods yet'* (case 6). Another solution is to make the application process more simple: *'The European Social Fund is a small grant, but relatively easy to apply to. Actually, this ESF model should be used more often for SMEs, also for larger amounts'* (case 9).

Although grants encourage the development of circular business models, it is not seen as the most effective stimulation for SMEs to undertake circular activities. Grants are less important than the aforementioned two measures. *'I do not think there should be a subsidy for SMEs, but legislation that makes non-circular action illogical, unpleasant or expensive'* (case 8). Case 7, case 10 and case 11 agree: *'As a government, I would not provide stimulation from the area of subsidies, but rather act as principal. I believe that the government should focus more of their procurement on the circular economy and in this way stimulate the market. I think this is the most effective way to help circular businesses and promote the circular economy. Subsidies can be of importance, but they are especially important for the early pioneers'* (case 11). So first the demand for circular products and services must be stimulated and thereafter subsidies are needed as well to encourage startups in this branch.

Hypothesis 4 can only be confirmed partly. SMEs, in part, agree that financial support is an effective support mechanism, they find tax concessions a useful tool, subsidies however should only be used for startups.

#### 7.4.3 Coach

Some SMEs indicated a need for environmental audit. They suggested a coach, which address issues like compliance with environmental regulations and looks where the SMEs can improve their activities in line with the circular economy. This idea, however, is only suggested by the consultants: *'SMEs need ideas. In my view, it makes sense if someone goes over the set-up of the organization with them and says what they can do differently and look with them at their business model. Which is a combination of knowledge and experience in this type of marketing work at an individual company'* (case 2). Also case 9, a grant consultant, thinks this is a good idea: *'A personal coach from the government side that looks at where an SME can change but also helps with grant applications. I think the Green Deals are a good idea. I do not know if it works, but it fits well with this idea. Why could it not? You only need more officials. But it can also be a freelancer who knows all the laws of Europe. I know such a person. He should take five to ten SMEs under his wings. Of course you do not have to focus full time on one single company. If it is properly clustered, it also can remove a lot of overlap'* (case 9). Case 4 thinks it is a great idea, but it is not feasible: *'A coach would be an idea. The strength of such a coach is especially that he can put ten companies together and they will consult with each other. The idea is not bad, it could work very well. But then again, the circular economy is such a comprehensive concept, how do you get all that knowledge in one person? I also believe that that is a bit the pitfall, trying to pour it in a form. It is almost impossible for one person. The idea of a coach is nice, but I am critical of how it works. It cannot be that one person has all the answers to all the questions'*.

The consultants confirm hypothesis 5 that environmental audits are effective stimuli for environment-driven enterprises to enhance their circular activities. However, the enterprises themselves are not fully convinced of this. They think it would be a good idea, but a coach who knows everything about the circular economy does not exist and therefore are very critical of this intervention.

#### 7.4.4 Partnership

The entrepreneurial mentality ensures that business owners want to keep their ideas to themselves: *'Everyone thinks they have golden eggs in their basket and do not want to share them. Protecting your intellectual property. They want to be in a safe haven first, in an economically sense, and then they are willing to work together'* (case 9). However, this delays the transition to the circular economy. The circular economy requires a change in the entire value chain and one SME cannot change this on its own. Every company needs partners in order to change the whole value chain. *'To be able to scale up a circular pilot into production, you need, besides financial buffers, more partners and strong partnerships'* (case 9). Governments can play an important role in establishing partnerships. Firstly, *'an industrial site contains a lot of redundancy in heavy equipment. The machines are often scarcely used or not used at all anymore, which makes sharing at an industrial site a really good idea. The individual companies do not have a strong interest in this and therefore will not organize it. The municipality is in a position to take initiatives in this area'* (case 2). Secondly, governments should create platforms that bring parties together. *'With a coach you are assuming the malleability of affairs. Someone who has to look for that kind of connection will cost money and*

*then as a SME you will do it yourself. Actually, you should encourage partnerships with a platform that stimulates alliances. An example of such a platform is FabCity which brings people together. The alliances that arise there, occur naturally with no one in between. Companies have to be brought into contact with each other in a way that is appropriate for them' (case 6).*

## **7.5 European Circular Economy Package**

Four of the twelve respondents were aware about the EU Circular Economy Package because *'that is our daily work'* (case 8). Seven of the twelve respondents were aware that the EU is taken action in the area of the circular economy: *'Most companies in my industry know of it, but also keeps their hands off to some extent because of the complexity'* (case 10). This is confirmed by case 11: *'Occasionally I catch something about it, like in a newsletter. But that does not mean I have knowledge about it, it is all Greek to me and it feels too far away'*. The other five respondents were not aware of a circular economy policy of the EU, but according to case 7 they are definitely not the only one: *'I think that in more than 90% of the SMEs are not aware that the EU has a circular economy policy. They have no idea it is there, it exists and what it can do for them. I think this is because the information does not reach them. If you do see something about it, you think very quickly that it will not apply to you. This is because the measures are too large and too complex and too far removed from the daily practices of an SME'*.

The SMEs believe that there should be a strong circular policy at European level, but the implementation of the policy should be especially at provincial or municipal level. A reason for this is that *'most SMEs do not hesitate to contact the municipality. So if you want to reach companies, in most cases the municipality is the best partner. Everyone struggles to reach SMEs because it is a very large diverse group. Every Dutch Councilor of Economics says that they are a genuine SME community. They have a better impression of SMEs than the national government and the European authorities. SMEs are notoriously complex and if someone can grasp a bit of SMEs is that the municipality'* (case 6). Case 5 foresees problems if the executive power lies in the hand of the municipality and argues that the executive power has to be mainly at the province level: *'The provincial level is responsible for the spatial planning of industrial area, much infrastructure and picking up more and more power directed at retail. Then you will get a unity in circular policy, because otherwise each municipality still can do his own thing. This is what I often encounter. An entrepreneur does not look at municipal boundaries in general. If they have two branches, often they have two branches in two different municipalities. It makes it very difficult if they both have other arrangements. If you are going to tackle something in your business, then you do it naturally in your entire business and not only in one location and the other establishment not. Therefore, the same circular policies have to be applied at both locations. Then the director of the province is really important'*.

The Circular Economy Package offers three types of support mechanisms to SMEs: financial support, business advice and voluntary standards. These are all three capacity-building interventions and will be discussed below:

### **7.5.1 Financial support**

As discussed in the previous chapter, financial support stimulates the development of circular business models and are therefore especially welcomed by startup companies to start and explore their circular business model. Respondents are in favor of subsidy programs but want a more accessible and a higher success rate of grants which they are eligible for. Subsidy advisor

case 9 says about the subsidy programs in the Circular Economy Package: *'It has become a bit better, but still they are not written from the applicant's perspective'*. Also case 12 is not satisfied with the subsidization of the Circular Economy Package: *'The success rate is still quite low. It is between 14% and 18% for SMEs, depending on where you are located. This does not make it interesting for SMEs. We even recommend SMEs to not look at it'*. Also the criteria of the subsidy programs have not become more accessible to SMEs. The new SME instruments under Horizon 2020 and COSME both support only companies with a cross-border dimension (RVO, 2016; European Commission, 2016e). The interviewed SMEs do not have a cross-border dimension and most SMEs do not have. The EFSI finances up to 50% of investments and only projects upwards of a total investment of €50 million. For lower amounts SMEs can apply through financial institutions such as banks. The EFSI does not provide grants to SMEs, but loans and it is also hard to access it: *'I have tried, but it failed. For now, I will no longer sign for European programs anymore because it takes me more time and energy than it produces'* (case 5). These four grant programs all have the criterion that they want to receive a convincing business plan explaining the intended effect which will be achieved and how this can be measured. This requires a lot of specific knowledge and skills that entrepreneurs who are starting an enterprise from a social motivation often lack. Moreover, these programs are focused on the end product and not on the process, which is a criticism of the current subsidies, according to several respondents: *'The problem of most schemes is that it is concentrated on the end product and not on the process. What we need in the circular economy is process money. Governments should cooperate with companies to explore viable circular business models. Ultimately, this can also lead to product innovation or new production facilities. For now, we mainly need process money and that money is not there'* (case 2). Lastly, for the Cohesion Policy and EaSI, it is very hard to find on the internet the criteria that an SME must meet in order to apply for the subsidy program. These are all clear obstacles for SMEs to qualify for these European subsidies. SMEs are in favor of subsidy programs, as assumed in hypotheses 4, but are dissatisfied with how they are designed.

### 7.5.2 Business advice

Whether an advisory platform is an effective support mechanism, a clear separation is noticeable between foundations, who find it a good idea, and circular for-profit corporations, who are more hesitant. SMEs can obtain business advice on these platforms and they are also brought into contact with other SMEs in the EU. Case 4, a proponent, says: *'For us it would be very interesting to be connected to it. Even though we are only operating in Amsterdam, we always look for cross-pollination with other cities and other projects to see what works and what does not. You should not invent something that another has done already. Therefore, I am in favor of this type of platforms'*. Case 3 sees the relevance of advisory platform for in the future: *'It is absolutely relevant, but not for the following week, but perhaps in a number of years though. If we end up having a pilot project that works in Amsterdam and maybe also in Utrecht, then it will be interesting to also do it outside the Netherlands. These kinds of platforms are of interest for the long-term'*. Case 11 is also in favor, but he also explains why entrepreneurs are not advocates of the platforms: *'I did not know of its existence, but I find it interesting. I could add something and perhaps also learn something from it. I am always open for that kind of initiatives and knowledge sharing opportunities. Whether the average entrepreneur is going to do that, I do not think so. An entrepreneur will only go to a website to chat with a Polish entrepreneur if he sees trade possibilities. However, I do not think the average SME sees a market in this'*. That entrepreneurs have another

mindset is confirmed by case 7: *'I certainly would not use it, because I do not see the added value for me'*, and case 6: *'I think it is a nice gesture when it is cost-effective. It should also provide something'*.

Hypothesis 6 'Business advice would be effective for advantage-driven and environment-driven enterprises' is confirmed by a certain group, environment-driven SMEs that do not have profit, and rejected by a particular group, environment-driven SMEs who have to make profit to survive. For the last group, the circular economy is a small market and in order to survive they have to focus on the local market. This makes engaging in the European market and getting business advice at European level irrelevant to them.

### 7.5.3 Voluntary standards

Hypothesis 3 'voluntary standards are effective for advantage-driven and environment-driven enterprises' is rejected. The final support mechanism the EU provides consists of voluntary standards, in particular quality labels. None of the respondents has an eco-label. Case 12 says about it: *'Our companies are not welcoming eco-labels. Labels do have a function, but our sector partners feel they are inconvenient, a lot of work, time-consuming and eventually do not have much effect'*. Case 3 agrees and explains that he has no eco-labels because *'there are so many labels in the market that the consumer does not understand the labels anymore and therefore does not let its purchase depend on that. You need something to excite consumers but they have lost confidence in labels'*. Case 5 also indicates that the market is saturated with labels: *'There are al a lot of eco-labels, too much even'*.

## 7.6 Conclusion

All the respondents are environment-driven enterprises. Hypotheses 1 and 3 are rejected, because compulsory regulation and voluntary standards are seen by the SMEs as an ineffective intervention to encourage SMEs to make the transition to the circular economy. The other hypotheses are only partly confirmed. Hypothesis stating that financial penalties are an effective intervention to ensure circular actions are undertaken, is not endorsed by all the interviewed SMEs. SMEs consider tax concessions a useful tool, but they find that subsidies however should be focused on startups. This ensures that hypothesis 4 is partly accepted. The consultants in this study confirm hypothesis 5 that environmental audits are effective stimuli for environment-driven enterprises to enhance their circular activities, while the enterprises themselves do not believe this is feasible in the case of the circular economy. Lastly, hypothesis 6 is confirmed by environment-driven SMEs that do not have profit, but the intervention of business advice is rejected by environment-driven SMEs who have to make profit to survive.

## 8 Conclusion and discussion

The main research question for this research is:

*To what extent do the EU support mechanisms articulated in the EU Circular Economy Package of 2 December 2015 provide a sufficient basis for SMEs in Amsterdam to support them in the transition towards a new circular business model?*

The short answer to this question is that the Circular Economy Package does not provide a sufficient basis for SMEs in Amsterdam to make the transition to a circular business model. The interviews showed that the SMEs in this study were environment-driven enterprises due to their strong drive from their personal conviction about the circular economy. They did not start with circular activities based purely on economic grounds, but from a personal need. The majority of them do not favor coercive strategies to ensure a transition towards the circular economy, but believe that governments has to establish capacity-building interventions to ensure the transition. Subsidies, tax concessions, environmental audits and business advice were seen by them as effective intervention to stimulate SMEs to implement circular business models. But the most effective intervention for them is for the government to create an economic market for circular products and services.

SMEs do not look for support of their circular activities at the European level. In fact, SMEs do not know that the package exists. But they believe that the EU can play an important role in ensuring that the conditions for SMEs to transit to a circular business model are beneficial in all the Member States. The answer to the research question will be further explained on basis of the answers to the sub-questions below.

### 8.1 Obstacles

*Which obstacles do SMEs face concerning the implementation of circular economy principles?*

Previous literature has shown that SMEs may encounter obstacles when they try to implement circular activities. The obstacles which are confirmed in this study are the external obstacle of financial incentive and the internal obstacle of knowledge. The shift to a circular economy requires innovative business models, but SMEs have difficulties in accessing finance. Banks are often unwilling to invest in circular SMEs and the procedure for obtaining public funding takes much time, paperwork and money that is not in comparison to what it brings. Moreover, the success rate of obtaining a grant for SMEs is too low. In addition, there is a feeling of distrust by SMEs towards the government. For an SME it is hard to apply for funding and to succeed, and if they get a grant, it is not yet certain that this will remain. Furthermore, the different mindsets of governments and entrepreneurs reinforces the distrust of the governments. SMEs are afraid that if their business operates on public money they have to disclose their acquired knowledge. The preferred role of the government should be to increase the empowerment of the economy in the circular direction. This means that public money should not be invested in further subsidies, but in increasing the demand for circular products and services.

The SMEs also indicated the obstacle of limited knowledge about how to engage in the circular economy. SMEs need advice on how to improve their business model and on funding possibilities. The respondents suggested the idea of a coach who helps SMEs to change their

business model into a circular business model. The unfamiliarity of owner-managers with the circular principles ensures prejudices about making systemic changes. A coach can help them to break from the linear thinking. In addition, a coach can help an SME to apply for the appropriate subsidies. All respondents indicated that they have begun circular activity from a personal drive. Because the drive to start a circular business is from a personal belief, they do not always have the entrepreneurial skills to develop a good business plan with measurable results. This is a criterion to apply for a grant and a coach can help them there too. However, respondents also criticized the idea of a coach because they do not think one person can have all the knowledge about the circular economy. This is because there is no single definition of circular economy yet, which was confirmed in this study. With no clear definition of which activities could be defined as circular or not it is impossible to properly train coaches and decide which companies are eligible for support.

Lastly, in this study obstacles are raised which are not dealt with in the literature. These obstacles are that the municipal structure makes it difficult for companies to undertake circular actions, there is a lot of talking about the transition to the circular economy but it is not reflected in practice and the ambiguous definition of circular economy.

## **8.2 EU support mechanisms**

*Which EU support mechanisms for SMEs listed in the EU Circular Economy Package are used by SMEs?*

Not one of the respondents has used the EU support mechanisms to support their circular activities. The survey found that the vast majority of respondents were not even aware of the Circular Economy Package and these findings were confirmed in the in-depth interviews. Only four of the twelve respondents were aware of the Circular Economy Package. However, these were all consultants of which it is their daily work to be informed about circular policies. These consultants do not advise SMEs to apply for the support mechanisms set out in the Circular Economy Package because the support does not compensate the time and money an SME invests in the application.

## **8.3 The discrepancy between EU support mechanisms and needs of SMEs**

*To what extent is a discrepancy present between the support mechanisms and the needs of the SMEs, and how might this be solved?*

The European support mechanisms do not correspond to the needs of SMEs engaging in the circular economy. Although there is a need among SMEs that governments promote partnerships, the platforms articulated in the Circular Economy Package are not seen as the solution. SMEs do not see the added value of these platforms, because they will not benefit from it right away. Instead, they want that governments encourage local partnerships and not yet European partnerships.

Also the quality labels do not match the needs of SMEs because they are seen as a hassle to apply for. Furthermore, as there are already a lot of different labels, which start to confuse the customers, it does not deliver much to their sales.

Respondents indicated that they want accessible grants for SMEs. These subsidies should maintain normal criteria, not taking a lot of time to apply for and be written in plain language. Two solutions have been proposed to facilitate access to public funding for SMEs. The first solution is to increase the budget drastically so more SMEs can benefit from public funding and therefore



less complex conditions have to be set. The second solution is to create a European platform for crowdfunding only for sustainable initiatives. Half of the investment is paid by the government and the other half has to be collected through crowdfunding. In this solution, the control is already installed as the crowd will most likely only invest money in seemingly viable businesses. There is demand for subsidies, however, subsidies are not seen by SMEs as the most effective stimulation for SMEs to undertake circular activities. All government levels within the European Union should play an important role in stimulating the demand of circular products and services, which can be done in two ways. The first method is through the introduction of price incentives that make it attractive to buy circular products or services. To make this possible, the EU should adapt the VAT Directive (2006/112/EC). The principle of neutrality - one of the basic principles of the VAT system - states that intrinsically similar goods which compete with each other should be treated equally. The neutrality principle ensures that circular products are not allowed to have different VAT rates than linear products. If the EU removes this limitation, Member States may decide whether to levy taxes to stimulate their circular policy. The second method is that governments in their procurement should prioritize circular goods.

What clearly emerged from the interviews is that entrepreneurs and governments have a different mindset. Governments do not understand fully how SMEs think and work. The government wants to keep control, while an entrepreneur seeks freedom. Therefore, government support often vexes SMEs, they need to maintain and explain every move they make. SMEs do not operate from a policy perspective and this is also an important difference between SMEs and large companies. SMEs often do not have a strategic vision of where they are going such as large companies, but are much more based on intuition. They want to do their own thing between the frames appointed by the authorities. Moreover, entrepreneurs want funding when starting their business, but do not want the operation of their business to always depend on subsidies. If this is the case, they believe that they do not have a good business model. They want to show other entrepreneurs that a circular business model can be viable on the economic market. This entrepreneurial mindset was evident in all of the producers. Remarkably, this entrepreneurial mentality is also not understood by the consultancy firms. The consultants argue that entrepreneurs are not entitled to public funding only because the process is too difficult and delivers too little. This is certainly one reason why SMEs do not apply for grants, but the entrepreneurial mindset is certainly important too.

#### **8.4 Discussion**

The conclusions of this study cannot be generalized for all SMEs in the EU which are engaging in the circular economy. In this research the choice was made to only study SMEs that are situated in Amsterdam due to the ambition of the Dutch Presidency of the Council of the European Union to make the city of Amsterdam the hotspot of the circular economy. SMEs located in the city of Amsterdam, are of the opinion that the European support mechanism does not fit with their needs, in particular not creating more subsidies. However, it should be kept in mind that the Netherlands is generally a rich country and business owners often have enough own resources to start their circular business. They can afford to have this entrepreneurial mindset wanting to be independent of subsidies. It is interesting for further research to investigate whether this entrepreneurial mindset includes all the entrepreneurs in the EU or only entrepreneurs who can afford to start a business themselves.

Moreover, in this study, any SME that was open to an interview has been interviewed. This is because it was very difficult to find SMEs that were willing to cooperate with this study. Which has the result that no selection could be made on the sectors of the SMEs or on their size. The difference in size between a micro and a medium-sized enterprise is substantial. Medium-sized enterprises often possess characteristics that are more comparable to large enterprises than to micro enterprises. This difference is clearly discernible in the structure of an enterprise and therefore its flexibility and support that it needs to change to a circular business model. For further research, it is interesting to study whether differences exist between SMEs in different sectors and size in the use of European support mechanisms.

Lastly, the interviews showed that all the respondents were environment-driven enterprise. This is not a surprise because the circular economy is a new concept and therefore there is not yet an economic market for circular products and services established. The respondents are the first pioneers. This, however, ensures that the findings in this study are drawn from the ideas of environment-driven enterprises who are now dominating the circular market. If the circular economy becomes the new economy in the EU, also other types of SMEs will adapt to the circular economy which may encounter other obstacles and therefore need other measures by the EU.

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# Appendices

## Appendix A The survey

Welkom!

Net als u, wil ik graag de circulaire economie bevorderen. Ik onderzoek voor mijn master scriptie of Europese steunmechanismes efficiënte aansluiting vinden bij de behoefte van de midden- en kleinbedrijven (MKB) in de transitie naar een circulaire economie. Zelf doe ik mijn afstudeerstage bij BeeBlue, een startup die probeert circulair te ondernemen. Op Europees niveau hebben ze interesse in mijn onderzoek waardoor met dit onderzoek wij de EU kunnen informeren hoe ze ons het best kunnen steunen. Ik hoop daarom heel erg dat u met dit onderzoek wilt helpen!

De enquête bestaat uit 15 vragen en kost ongeveer **3 minuten** om in te vullen. Het bestaat uit drie delen: algemene vragen over uw bedrijf, vragen over mogelijke externe steun waar uw bedrijf gebruik van maakt en tenslotte vragen over Europese steunmechanismes.

Als u andere MKB'ers kent die gevestigd zijn in Amsterdam en affiniteit met de circulaire economie hebben, wilt u deze enquête ook naar hun doorsturen? Dit kan door middel van deze link:

[https://proxy.qualtrics.com/proxy/?url=https%3A%2F%2Fusbo.az1.qualtrics.com%2FSE%2F%3F3F3SID%3DSV\\_8pMtmmyGal9uK&token=aqaADIXwwmJVw1qqUHTn%2BwfZ%2F08vs7CvKr2GRASjKAs%3D](https://proxy.qualtrics.com/proxy/?url=https%3A%2F%2Fusbo.az1.qualtrics.com%2FSE%2F%3F3F3SID%3DSV_8pMtmmyGal9uK&token=aqaADIXwwmJVw1qqUHTn%2BwfZ%2F08vs7CvKr2GRASjKAs%3D)

Dit onderzoek doe ik vanuit de masteropleiding European Governance aan de Universiteit Utrecht en Masaryk University in Tsjechië.

**BELANGRIJK:** Enkel de onderzoeker zal de onbewerkte data van de enquête kunnen bekijken. Externe actoren krijgen enkel de verwerkte, gegroepeerde gegevens te lezen. Jouw anonimiteit wordt gegarandeerd!

Met vriendelijke groet,  
Godelief Wösten

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### Q1 Algemeen

Uit hoeveel werknemers bestaat uw bedrijf?

- 1 - 10 (1)
- 11 - 50 (2)
- 51 - 250 (3)
- > 250 (4)

If > 250 Is Selected, Then Skip To U behoort jammer genoeg niet tot de d...

Q2 Heeft uw bedrijf een vestiging in Amsterdam?

- Ja (1)
- Nee (2)

If Nee Is Selected, Then Skip To U behoort jammer genoeg niet tot de d...

Q3 In welke sector zit uw bedrijf?

Q4 Houdt uw bedrijf zich bezig met circulair ondernemen?

- Ja (1)
- Nee (2)

If Nee Is Selected, Then Skip To U behoort jammer genoeg niet tot de d...

Q5 Wat is de voornaamste functie van uw bedrijf wat betreft circulaire ondernemen?

- Ontwikkeling van een product of service (1)
- Ondersteuning van circulaire ondernemers (2)

**Q6 Externe steun**

Krijgt of kreeg uw bedrijf externe steun voor (de transitie naar) circulair ondernemen?

- Ja (1)
- Nee (2)

If Nee Is Selected, Then Skip To Vindt u dat er een tekort is aan publ...

Q7 Was het organisatorische en/of financiële steun?

- Organisatorische steun (1)
- Financiële steun (2)
- Beide (3)

Q8 Was het steun van een publiek of privaat orgaan?

- Publiek (1)
- Privaat (2)
- Beide (3)

If Privaat Is Selected, Then Skip To Vindt u dat er een tekort is aan publ...

Answer If Was het steun van een publiek of privaat orgaan? Publiek Is Selected Or Was het steun van een publiek of privaat orgaan? Beide Is Selected

Q9 De publieke steun kwam van:

- De gemeente (1)
- De provincie (2)
- De nationale overheid (3)
- De EU (4)

Q10 Vindt u dat er een tekort is aan publieke steun voor uw bedrijf om de overgang naar de circulaire economie te bevorderen?

- Ja (1)
- Nee (2)

If Nee Is Selected, Then Skip To Kennis EU-steunmaatregelen Wist u dat...

Q11 Waarin zou u meer gesteund willen worden?

Q12 Van welk bestuurlijk niveau vindt u dat deze steun zou moeten komen?

- De gemeente (1)
- De provincie (2)
- De nationale overheid (3)
- De EU (4)

**Q13 Kennis EU-steunmaatregelen**

Wist u dat de Europese Commissie op 2 december 2015 het Pakket Circulaire Economie heeft aangenomen?

- Ja (1)
- Nee (2)

Q15 Geef aan met welke Europese steunmechanismen u bekend bent:

- Europees Kenniscentrum inzake Hulpbronnen efficiëntie (European Resource Efficiency Excellence Center) (1)
- Het Milieubeheer- en Milieuauditsysteem van de EU (EMAS) (2)
- Het Proefprogramma inzake Milieutechnologietoetsing (ETV) (3)
- Horizon 2020, zoals SME Instrument en LIFE (4)
- Het Cohesiebeleid, zoals Cohesiefonds (CF), het Europees Fonds van Regionale Ontwikkeling (ERDF) en het Europese Structuur- en Innovatiefonds (ESIF) (5)
- Het Programma voor het Concurrentievermogen van Ondernemingen en MKB-bedrijven (COSME) (6)
- Het Programma voor Werkgelegenheid en Sociale Innovatie (EaSI) (7)
- Europees Fonds voor Strategische Investeringen (EFSI), zoals InnovFin (8)
- De Europese investeringsadvieshub (EIAH; European Investment Advisory Hub) (9)
- Anders, namelijk: (10) \_\_\_\_\_
- Geen van allen (11)

Q16 Geef aan van welke Europese steunmaatregelen u gebruik maakt of heeft gemaakt:

- Europees Kenniscentrum inzake Hulpbronnen efficiëntie (European Resource Efficiency Excellence Center) (1)
- Het Milieubeheer- en Milieuauditsysteem van de EU (EMAS) (2)
- Het Proefprogramma inzake Milieutechnologietoetsing (ETV) (3)
- Horizon 2020, zoals SME Instrument en LIFE (4)
- Het Cohesiebeleid, zoals Cohesiefonds (CF) en het Europees Fonds van Regionale Ontwikkeling (ERDF) en het Europees Structuur- en Innovatiefonds (ESIF) (5)
- Het Programma voor het Concurrentievermogen van Ondernemingen en MKB-bedrijven (COSME) (6)
- Het Programma voor Werkgelegenheid en Sociale Innovatie (EaSI) (7)
- Europees Fonds voor Strategische Investerings (EFSI), zoals InnovFin (8)
- De Europese investeringsadvieshub (EIAH; European Investment Advisory Hub) (9)
- Anders, namelijk: (10) \_\_\_\_\_
- Geen van allen (11)

Answer If Algemeen Uit hoeveel werknemers bestaat uw bedrijf? > 250 Is Selected Or Heeft uw bedrijf een vestiging in Amsterdam? Nee Is Selected Or Houdt uw bedrijf zich bezig met circulair ondernemen? Nee Is Selected

Q21 U behoort jammer genoeg niet tot de doelgroep van dit onderzoek. Bedankt voor uw medewerking. Wilt u de naam van uw bedrijf aangeven zodat ik u later niet onnodig nogmaals benader (deze informatie wordt enkel hiervoor gebruikt):

- Naam bedrijf: (1) \_\_\_\_\_

Answer If Dit was slechts een verkennende enquête om inzicht te krijgen in de kennis onder het MKB betreffende Europese steunmaatregelen. Ik wil graag interviews afnemen met mensen in het MKB om erachter te ... Nee Is Selected

Q19 Wilt u de naam van uw bedrijf aangeven zodat ik u later niet onnodig nogmaals benader (deze informatie wordt enkel hiervoor gebruikt):

- Naam bedrijf: (1) \_\_\_\_\_

Answer If Dit was slechts een verkennende enquête om inzicht te krijgen in de kennis onder het MKB betreffende Europese steunmaatregelen. Ik wil graag interviews afnemen met mensen in het MKB om erachter te ... Ja Is Selected

Q18 Click to write the question text

- Naam bedrijf: (1) \_\_\_\_\_
- E-mailadres: (2) \_\_\_\_\_

Q17 Dit was slechts een verkennende enquête om inzicht te krijgen in de kennis onder het MKB betreffende Europese steunmaatregelen. Ik wil graag interviews afnemen met mensen in het MKB om erachter te komen waar behoefte aan is bij de transitie naar circulair ondernemen, en

welke barrières er momenteel zijn. Zou ik contact met u mogen opnemen voor eventuele vervolgvragen of een kort interview?

- Ja (1)  
 Nee (2)

## Appendix B Case studies

Firm	Size	Sector	Circular economy practices
1	Micro	Consultancy	<ul style="list-style-type: none"> <li>• Advice on product design</li> <li>• Advice on sustainability of the production chain</li> </ul>
2	Micro	Consultancy	<ul style="list-style-type: none"> <li>• Implements the circular economy in private and public organizations</li> <li>• Has the concept of circular economy introduced in the Netherlands in 2010</li> </ul>
3	Micro	Product innovation	<ul style="list-style-type: none"> <li>• Offers a physical and digital platform for startups and organizations</li> </ul>
4	Micro	Foundation for sustainability	<ul style="list-style-type: none"> <li>• Designs projects with residents, businesses and government to accelerate sustainability of the city of Amsterdam</li> </ul>
5	Small	Hospitality industry	<ul style="list-style-type: none"> <li>• Reduces food waste</li> </ul>
6	Micro	ICT	<ul style="list-style-type: none"> <li>• Involved in Green Deals</li> <li>• Forms a view about sustainable mobility</li> </ul>
7	Micro	Food and packaging	<ul style="list-style-type: none"> <li>• Produces snacks that respects sustainability questions</li> <li>• Looks towards sustainable packaging</li> </ul>
8	Small	Consultancy	<ul style="list-style-type: none"> <li>• Senior consultant for climate, energy and sustainability</li> <li>• Chair of the board of several innovative green technology companies</li> </ul>
9	Medium	Grant consultancy	<ul style="list-style-type: none"> <li>• Advice on grants and finance for innovation and technology</li> </ul>
10	Medium	Manufacturing	<ul style="list-style-type: none"> <li>• Design public space</li> <li>• Responsible for circular and social entrepreneurship</li> </ul>
11	Small	Foundation for circular economy	<ul style="list-style-type: none"> <li>• Active in thinking along about, doing feasibility studies to, preparing of and growing through opportunities and concrete projects from circular assumptions.</li> <li>• Focused on collaboration between business, education and government.</li> </ul>
12	Medium	Sustainable Business Association	<ul style="list-style-type: none"> <li>• Manager Public Affairs Circular Economy</li> <li>• Lobbyist Circular Economy Package</li> </ul>

## Appendix C Structure and questions for interview

**Kunt u kort vertellen wat uw bedrijf precies doet en hoe dit relateert aan de circulaire economie?**

- Wanneer bent u opgericht?

**Kunt u vertellen wat uw redenen waren om u, met uw bedrijf, op de circulaire economie te richten?**

- Is uw bedrijf opgericht met duurzaamheid als kernprincipe of is het later verschoven naar een duurzamer model?
- Maakt u het besluit welke kant het bedrijf op gaat of zijn er meerdere mensen die het besluit maken?
- Zijn uw concurrenten ook betrokken bij duurzaamheid? Zo ja, hoe? Zo nee, denk je dat u profiteert van de first mover voordelen?

Drivers: persoonlijk, milieu, economisch, milieuwetgeving.

**Kunt u vertellen of u obstakels bent tegen gekomen bij het implementeren van circulaire processen en welke obstakels dit zijn?**

- Welke obstakels ondervindt u nog steeds hinder van?
- Wat zijn de meest genoemde obstakels bij andere bedrijven om de circulaire principes te implementeren? Zie vorig antwoord over concurrenten!

Obstakels: financieel, steun van overheden, informatie en skills, consumenten, technologie, keurmerken, leveranciers.

**Circulaire Economisch Beleid van de EU**

JA

- Hoe bent u aan de informatie gekomen?
- Hoe zorgen jullie ervoor dat jullie up-to-date blijven met nieuwe ontwikkelingen op Europees niveau?
- Maakt u van instrumenten gebruik? Eigen bedrijf of advies?
- Wat vindt u van de procedure rond het gebruik van de instrumenten?
- Vindt u dat het gebruikte instrument aansluit bij uw behoefte?
- Verklaring verschil tussen kennis van instrumenten en gebruik ervan?

U heeft veel kennis van externe steun maar geeft zelf aan dat u er geen gebruik van gemaakt heeft, waarom niet?

NEE

- Zou u gebruik willen maken van Europese steun? Obstakels?
- Weet u of bedrijven om u heen er wel gebruik van maken?

**Kunt u vertellen of u externe steun heeft gehad bij het circulair ondernemen?**

- Privaat of publiekelijk?
- Welk niveau?
- Waarom heeft u wel of niet gebruikt gemaakt van externe steun? Heeft u een aparte tak dat zich bezighoudt met het aanvragen van subsidies en het implementeren van milieuwetgeving?
- Sloot deze steun genoeg aan bij uw behoefte?
- Mist u nog bepaalde steun? Van welk niveau vindt u dat deze steun moet komen?