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FOOD PACKAGING AND THE CIRCULAR ECONOMY:

BETTER REGULATION OF SECONDARY FOOD CONTACT MATERIALS

Identification of the regulatory bottlenecks for the uptake of secondary raw material (SRM) in food packaging to examine the better regulation opportunities in the upcoming review of the Food Contact Material (FCM) regulatory framework.

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To my family
Who taught me to
focus, fire and forget

To everyone I met during this process
Who showed me how to
fall and fly

To myself
To never forget to
feel

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Food Packaging and the Circular Economy: A Better Regulation of Secondary Food Contact Material

Laura Weemering

Abstract

This thesis identified better regulation opportunities for the uptake of secondary raw material (SRM) in the Food Contact Material (FCM) regulatory framework. These opportunities were identified following the Better Regulation Insight Tool (BRIGHT). Using this method, first, regulatory bottlenecks were distilled from contributions to three public consolations held by the European Commission in the context of the review of the FCM framework using the PGRSI framework, an adapted DPSIR framework. Then these regulatory bottlenecks were analyzed and classified to determine their better regulation potential in the upcoming review of the FCM framework. Based on this research, this thesis concludes that a sustainable transition towards a circular economy (CE) for food packaging requires a fundamental rethinking of the current regulatory approach as a sustainable inclusion of SRM in FCM requires a circular regulatory framework for materials. Also, to realize the full potential of the European Union (EU), sustainable development issues like circular food packaging could gain significantly from a multi-level cooperative approach grounded in the ideas of Better Regulation, Better Knowledge and Better Funding.

Main Keywords:
Food Contact Material (FCM), Better Regulation, Food Packaging, Circular Economy, Secondary Raw Material (SRM)

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Abbreviations

BBP	Bio based plastics
BDCP	Biodegredable and compostable plastics
BRIGHT	Better Regulation Insight Tool
CE	Circular Economy
DPSIR	Driver Pressure State Impact Response (model)
DoC	Declaration of Compliance
EEA	European Environmental Agency
EFSA	European Food Safety Agency
EoW	End of Waste
EU	European Union
F4F	Fit for Future (Platform)
FCA	Food Contact Articles
FCM	Food Contact Materials
GFL	General Food Law (Regulation)
GMP	Good Manufacturing Practices
HDPE	High Density Polyethylene
KED	Kenniscentrum Europa Decentraal
LDPE	Low Density Polyethylene
MS	Member State
OCR	Official Controls Regulation
OML	Overall Migration Limit
PCR	Postconsumer Recyclates
PET	Polyethylene terephthalate
PGRSI	Pressure Goal Regulation State Impact (model)
PP	Polypropylene
PRM	Primary Raw Material
PPWD	Packaging Waste Directive
REACH	Registration, Evaluation, Authorization, and restriction of Chemicals (Regulation)
SME	Small and Medium-sized Enterprises
SML	Specific Migration Limit
SRM	Secondary Raw materials
SVHC	Substances of very high concern (SVHC)
SUP	Single Use Plastics (Directive)
WFD	Waste Framework Directive

PART 1 INTRODUCTION, FRAMEWORK & METHODLOGY

1 Introduction

This thesis argues that there are regulatory obstacles that impact a sustainable transition towards a circular economy (CE) for food packaging. Some of these obstacles can be addressed with better regulation in the upcoming review of the Food Contact Material (FCM) regulatory framework. Other obstacles require a fundamental rethinking of both food packaging and material use, as well as their overall current regulatory approach in European law and policy.

1.1 Background

Nearly all foods that are being sold are packaged in one way or another. Packaging plays a vital role in preservation and maintaining food safety and facilitates storage, handling, and transport. Furthermore, it holds the ability to inform consumers. Despite the advantages, food packaging causes rising concerns for the environment due to the waste creation and (in)direct pollution. These concerns are mainly related to the short usage time and high production volumes (Ellen MacArthur Foundation, 2017; Geueke et al., 2018; Hahladakis, J., Iacovidou, E., 2018; Matthews et al., 2021; Mendes & Pedersen, 2020).

To tackle the problems related to packaging waste creation, the promotion of the CE has in recent years gained a prominent position on the European Agenda. A key objective of the CE is to reduce raw material input and stimulate resource efficiency (European Commission, 2015b, 2020b; Geueke et al., 2018; Matthews et al., 2021). One way to realize these objectives is using secondary raw materials (SRM) originating from waste, and the use of by-products that otherwise would turn into waste. Waste and by-products contain constituents that can be extracted or transformed to be compatible with packaging uses. These includes for example recyclates and biopolymers (Mendes & Pedersen, 2020; Debeaufort, 2021) originating from both industrial/pre-consumer[1], as well as post-consumer waste. Implementing such reuse and recycling practices for food packaging material is proposed as a way to reduce the total amount of food packaging waste (Geueke et al., 2018; Hahladakis, 2018) and reduce the extraction of, and dependency on fossil resources (Mendes & Pedersen, 2020).

[1] Post-industrial material is sometimes used synonymously with pre-consumer material (European Commission, 2021b).

However, Industries and consumers generate significant quantities of waste and by-products that are poorly or not at all recovered (Debeaufort, 2021).

To promote the CE the European Commission has implemented and proposed measures that should stimulate this transition (European Commission, 2015b, 2020b). The revised Packaging and Packaging Waste Directive (PPWD; Directive 94/62[2]) increased the minimum recycling targets for packaging waste (See Table 1). By 2025, 65% of the packaging waste should be recycled (Article 6.f of Directive 2018/852). Additionally, 50% of the plastic waste and 75% of paper and cardboard (Article 6.g of Directive 2018/852) should be recycled. For 2030 these targets are increased to respectively 70%, 55%, and 85% (Article 6.i of Directive 2018/852).

Recycling target	31 December 2025	31 December 2030
All Packaging	65%	70%
Plastic	50%	55%
Wood	25%	30%
Ferrous metals	70%	80%
Aluminum	50%	60%
Glass	70%	75%
Paper and Cardboard	75%	85%

Table 1 Recycling targets in the revised Packaging and Packaging Waste Directive (Article 6 of Directive 2018/852).

To specifically address plastic waste generation, the European Commission implemented the Single Use Plastics (SUP) Directive (2019/904) in 2019. Besides issuing market restriction on several SUP products, the directive contains measures to promote a CE for plastics. By 2025 Member States (MS) of the European Union (EU) must ensure that 77% of beverage bottles are separately collected in such a way that they can be recycled (Article 9.1.a of Directive 2019/904). To achieve that objective, MS can for example establish deposit-refund schemes for plastic beverage bottles (Article 9.1 of Directive 2019/904). For 2030 this target separate collection target is increased to 90%. The collection targets are accompanied by design requirements. From 2025 onwards, PET beverage bottles must contain at least 25% recycled content (Article 6.5.a. of

[2] Lastly amended by Directive 2018/852

Directive 2019/904) For 2030 this target is increased to 30% (Article 6.5.b. of Directive 2019/904).

Collection target	2025	2029
Beverage bottles	77%	90%

Table 2 Separate collection target for beverage bottles in Annex Part F in the Single Use Plastics Directive (Article 9 Directive 2019/904)**.**

Recycling uptake target	2025	2029
PET bottles	25%	30%

Table 3 Recycled plastic uptake target for beverage bottles in Annex Part F in the Single Use Plastics Directive (Article 6.5 Directive 2019/904).

Furthermore, many food companies, including Coca-Cola, Unilever, and Nestlé, have made commitments to increase the use of recycled plastics in their packaging within the next 10 years (Misko, 2021).

Despite governmental efforts and business commitments to promote the CE, the use of recyclates (materials that are intended to be recycled[3]) for new food packaging material has not fully taken off, except for recycled PET in plastic bottles (De Tandt et all, 2021). Only a small fraction of the potential material stream from packaging material is recycled (Axelsson-Bakri et al., 2020; De Tandt et al., 2021; European Commission, 2018a; Hahladakis et al, 2018; Hahladakis, J., Iacovidou, E., 2018) and food companies and their plastic packaging suppliers face a major challenge in meeting the targets due to the limited supply available for recycled plastics (Misko, 2021).

The uptake of SRM in food packaging is challenged by technical issues such as existing recycling technologies, industry quality requirements and economical incentives (Misko, 2019; Axelsson-Bakri et al., 2020; De Tandt et al., 2021). Recyclates have to meet certain quality standards to guarantee that these materials are safe for use, because recyclates face higher contamination risks than primary raw (also known as virgin) materials (PRM) (Geueke et al., 2018; Hahladakis, J., Iacovidou, E., 2018; Horodytska et al., 2020; Mendes & Pedersen, 2020).

[3] For differences between SRM and recyclates see section 1.5.3.2.

To ensure that food packaging made from recyclates is safe, the EU adopted among others Regulation 282/2008 on recycled plastic materials and articles intended to come into contact with food. This regulation is part of the European Food Contact Material (FCM) regulatory framework that ensures the safety of food packaging materials. Regulation 282/2008 determines how recycled plastics can be used for FCM and Food Contact Articles (FCA). By that the regulation aims to contribute to the promotion of recycling while ensuring food safety. The legal requirements in this regulation however put further limitations on the use of recyclates with the current recycling technologies, waste sorting processes and packaging requirements (Simon, 2018; De Tandt et al., 2021; Vogt et al., 2021). Nevertheless, a large percentage of investigated recycled FCM was not compliant with FCM regulations (Dutra et al., 2014). Also, substances of concern were found in food packaging containing recycled plastics and paper. For example, pizza boxes likely originating from recycled materials contained chemical contaminants such as mineral oils, bisphenol A, phthalates (Selin et al, 2021).

The legal barriers for the uptake of SRM in food packaging are reasonable as there are health and safety concerns related to the use of SRM. Recyclates specifically can contain unwanted and hazardous substances resulting from the recycling process or due to cross-contamination, previous (mis)use and waste management (Hahladakis et al, 2018; Eriksen et al, 2019; Horodytska et al., 2020;De Tandt et al., 2021; Groh et al., 2021). Such substances could migrate into food at concentrations exceeding the threshold of concern and thus pose a risk to human health (Groh et al., 2021).

However, there might also be circumstances under which a legislative framework could be counterproductive for reaching the intended goals. An example of this is the current regulatory framework for food packaging that seems to be contradictory to the policy framework of the CE and the objectives. Alaranta (& Turunen, 2021) argues that the present EU regulation on waste, materials and the related risks has not been designed for the CE objectives as the Commission now wishes to introduce. This leads to regulatory challenges such as tensions between objectives of different regimes, the separation of waste, products and chemicals regulatory regimes and regulatory obstacles for turning waste back

into products. While legislation on waste contains requirements to increase recycling and the legislation on plastic contains obligation to increase the use of recycled materials and ban single use plastics, the strict rules for food packaging seem to make it difficult to use SRM in food packaging.

As a result, Simon (2018) states that companies are currently staying away from using recycled plastics because of legal risks. Furthermore, De Tandt (et al., 2021) indicate that recyclers face several technical challenges when trying to comply with legal requirements and operate in a regulatory grey zone due to the lack of clear legislative measures. As a result, Axelsson-Bakri (et al., 2020) point out that due to limited supply of legally permitted recycled plastics for food contact material investment in recycling facilities are limited as well. Also, the low price of virgin plastics challenges the uptake of SRM in food packaging material. Regulatory requirements thus can enhance limitations on the use of SRM with the current recycling technologies, waste sorting processes and packaging requirements. Fleurke (et al., 2019) on the other hand concluded that the direct legal obstacles for the uptake of recycled raw materials in plastic packaging are present but rarely pose a direct barrier to use SRM in food packaging.[4] However, they point out that the current regulation neither encourages the use of recyclates.

Where the waste framework has recently been modernized by the European Commission[5] the FCM-framework seems to be not up to date with the current developments. The basics of the FCM framework were introduced in 1976. Ever since, important technological developments have occurred in food packaging (Simoneau et al., 2016). Also, science has progressed in the field of chemical safety. Since its inception the framework has however never been systematically assessed. This is partly because there are no requirements to monitor the performance of Regulation 1935/2004. As a result, the framework thus seems not up to be up to date with technological developments and is lagging behind

[4] EVIRA the Finnish Food Authority (2018) interprets it differently and notes that it is not currently possible to use mechanically recycled plastic as a food contact material except behind a barrier.

[5] In 2018 the Waste Framework Directive (WFD; 2008/98) and the Packaging and Packaging Waste Directive (PPWD; 94/62) were revised (respectively, Directive 2018/851 and Directive 2018/852). Furthermore in 2019 the Single Use Plastics (SUP) Directive (2019/904) was introduced.

science (Groh et al., 2021) and is furthermore not ready for the transition to the CE.

The FCM framework is therefore since 2012 subjected to review to better regulate FCM. With the publication of the Green Deal (European Commission, 2019) the European Commission committed itself also to improve the FCM-system by taking into account both the ambitions set in the second Circular Economy Action Plan (European Commission, 2020b) as well as the subsequent Chemical strategy for sustainability towards a toxic free environment (European Commission, 2020c) and the Farm to Fork Strategy (European Commission, 2020a). More specifically the European Commission stated it will establish rules for the safe recycling into food contact materials of plastic materials other than PET (European Commission, 2020b), revise the FCM framework to improve food safety, ensure citizens health and reduce the environmental footprint of the sector.

As the regulatory environment is an important factor for the success of the CE (Groh et al., 2021) this thesis researched the current regulatory bottlenecks for the uptake of SRM in the FCM-framework. It identified these bottlenecks, analyzed them in more depth and examined how they could be addressed in this review. Specifically, this thesis grounded itself in the better regulation principles on which both the review, as well as the Green Deal strategies relied to enhance the effectiveness, efficiency, and coherence of FCM regulatory framework in the context of the CE. More detailed information on better regulation is given in chapter 3.

1.2 Research questions

This thesis was guided by the following research question: What are the possibilities to better regulate the uptake of SRM into food packaging material in the upcoming review of the food contact material regulatory framework to facilitate a sustainable transition towards a European Circular Economy?

To answer this question this research was guided by the following sub-research questions:

1. What is the current legal context for the uptake of SRM into food packaging material?
2. What are the current bottlenecks for the uptake of SRM into food packaging material?
3. Which of these bottlenecks are suitable for better regulation?
4. How can these bottlenecks be addressed by better regulation?

1.3 Relevance

This thesis aims to increase the effectiveness, efficiency, and coherence of FCM regulatory framework in the context of the European CE. The outcomes of this research could contribute to the FCM review and support the better regulation work of the European Commission.

More specifically this thesis intends to contribute to the public consultation of the FCM review that is planned for the third quarter of 2022 (Status: July 2022). The FCM regulatory framework is an extensive framework currently regulating substances, materials, and processes by several EU regulations (Simoneau et al., 2016). The use of SRM for food packaging is only one of the elements of this FCM framework. The size, the scope and the impact of this FCM regulatory framework thus makes the review a time-consuming process. Due to this, the adoption of amendments and new proposals have been delayed several times. The latest communication of the European Commission indicated that the FCM review will enter the adoption phase in 2023 as a proposal to amend the FCM framework is expected in the (European Commission, n.d.b)

In the Inception Impact Assessment of the FCM framework the European Commission (2020d) indicated that despite considerable data already exists to support the review of the FCM framework, additional data is still required. This thesis provides an overview of regulatory bottlenecks regarding the uptake of SRM's for FCM which can be used as a start for stakeholder consultations regarding this topic.

With that, this thesis places itself in a field that aims to better regulate FCM in the EU by providing insight in the current regulatory scheme. Simoneau (et al., 2016)(known as the JRC baseline study) for example identified shortcomings in

the FCM framework related to the harmonization of materials, risk assessments and indicated where improvements were needed to overcome safety and trade impacts. Grob (2019) also exposed weaknesses in the safety assessment of not specifically regulated migrating substances and recommended a combination of legislative and non-legislative changes. Also others highlighted that the regulation of specifically hazardous substances used in FCM is lacking (Groh et al., 2019 & 2021). Futhermore, Axelsson-Bakri et al., (2020) recommended EU policy makers to set mandatory requirement for recycled plastic contact for certain food packaging to enable a better functioning market for the uptake of SRM in food packaging and to establish an EU wide definition of recyclability of plastic packaging.

1.4 Methodology & Methods

This thesis was based upon mixed-research method, dominantly drawing on doctrinal research, qualitive content analysis and reform-oriented research methods are applied. This mixed research method approach was needed to answer the different (sub)questions in this thesis (Hutchinson & Duncan, 2012).

First, this thesis drew on doctrinal research to analyze the legal context governing food contact material in general and the uptake of SRM in food packaging specifically. Both primary sources such as EU regulations, directives as well as secondary sources such as literature, guidance documents and workshops were used to get an understanding of regulatory frameworks for food packaging in the CE. Doctrinal research was mainly used to answer the questions "What is the current legal context for the uptake of SRM into food packaging material?"

Then this thesis applied a qualitive content analysis to identify the current issues for the uptake of SRM. More specifically, the qualitive content analysis was used to distill meaning from the collected data, find patterns among the different data and synthesize perceived bottlenecks out of this data. Then, doctrinal research was used again to analyze the perceived bottlenecks in more depth and link the information from the qualitive content analysis to the regulatory framework. More specific information on the methodological approach for answering the question "What are the current bottlenecks for the uptake of SRM into food packaging material?" is given in chapter 3, 4 and 5. Chapter 3 also includes more

information on the methodological approach for assessing bottlenecks in the context of better regulation.

Lastly, reform-oriented research was used to evaluate the current regulatory framework in place and answer the main research question "What are the possibilities to better regulate the uptake of SRM into food packaging material in the upcoming review of the food contact material regulatory framework to facilitate a sustainable transition towards a European circular economy?

1.5 Research Limitations & Justifications

1.5.1 Time

This research in this thesis has taken place between September 2021 and April 2022. This scope influenced both the available literature for the identification of the regulatory issues for SRM into FCM/A as well as the identification of the better regulation opportunities of these issues.

1.5.2 Scope

This research was limited to researching plastic, paper and board FCM/FCA for food packaging.

The research mainly focused on the FCM framework. The manufacturing and the subsequent placing on the market of food packaging involves multiple regulatory frameworks (see Regulatory Framework). A complete analysis of all the bottlenecks involved in these regulatory frameworks was beyond the scope of this research. This research therefore limited itself to the FCM framework as this framework is currently under review by the European Commission. Interaction with other frameworks has been mentioned but were not further analyzed and discussed. A previous effort to explain the interplay between REACH and the FCM for recyclers has furthermore been done by the De Tandt (et al., 2021).

Secondly, this research focused on food packaging. The FCM regulatory framework not only involves food packaging, but also food storage containers, kitchen utensil and food processing equipment. This research however focusses on food packaging. The concerns regarding food packaging are mainly related to

the short usage time and high production volumes. The re-use and recycling practices for (food) packaging therefore hold potential in the accomplishment of the goals of the CE (European Commission, 2018a).

Furthermore, this research only focused on plastic, paper and board. Plastic, paper and board, glass, metal, and multilateral have been identified as most common food packaging materials (Geueke et al., 2018; Mendes & Pedersen, 2020; Simoneau et al., 2016). Recycled metal and glass are however, generally considered suitable for food packaging and as such metal and glass recyclates are more widely adopted (Geueke et al., 2018). By focusing on the regulatory problems for the uptake of secondary plastic and paper and board materials it included multi-material packaging as well.

1.5.3 Terminology

1.5.3.1 Bottleneck vs issue, problem, and barrier

In the proceedings of this thesis the word bottleneck is used. This is because bottleneck refers to a specific problem that "delays a process or stops it from continuing" (Cambridge Business English Dictionary, n.d.). As shown in the introduction, despite a policy goal and legal possibilities, the uptake of SRM for food packaging has not been taking of. Therefore, this research focused on the specific regulatory problems that stop this from happening. However, for readability, the word bottleneck has occasionaly been substituted in text by the more generic words problems, issues, and barriers.

1.5.3.2 Secondary raw material vs recyclates

This research mainly focused on the regulatory bottlenecks regarding the use of SRM. In the CE different type of materials are distinguished such as virgin or primary raw materials (PRM), secondary raw materials (SRM), by-products and recyclates. For the definitions this thesis mainly relied on the definitions set in the European Waste Framework Directives (WFD; 2008/98) as this directive sets out the basic concepts for waste management such as recycling and recovery of materials. The WFD is therewith an important source for the functioning of the European CE; From this directive it can be derived when food packaging material ceases to be waste and when the packaging material becomes an SRM.

SRM however, have no clear legal definition in the EU (JRC, 2021). This thesis therefore refers to SRM for materials that have reached the end of its intended life and can be re-used in the economy as new raw materials by forms of re-use, recycling and recovery (European Commission, 2015b; JRC, 2021). SRM's differ from recyclates as these materials are intended to be recycled [6], whereas SRM's could also be reused[7] in the same form, downcycled, upcycled or disposed[8] (Lee et al., 2001). The focus on SRM furthermore also allowed the inclusion of by-products. By-products are defined in the WFD as substances resulting from a production process whereby the aim was not the production of that substances (Article 5.1 of Direective 2018/851). The focus on SRM therefore fits better to the principles of the CE (Axelsson-Bakri et al., 2020) then the mere focus on recycling.

1.5.3.3 Regulatory vs legislative

This thesis used the term on regulatory bottlenecks even though the focus of the research was the identification of possibilities within the FCM-legislation. This is because the use of the term regulatory allowed the analysis of the whole regulatory framework. This means: all EU and MS interventions – legislative or non-legislative – such as regulations and directives, delegated and implementing acts and administrative action. The regulatory framework therewith also includes the implementation and enforcement of the legislative acts. Furthermore, it also allows to consider regulatory failures where no legislation exists and the examination of non-legislative EU action. Researching the whole regulatory framework therefore fitted better to the research aim which was increasing the effectiveness, efficiency, and coherence of FCM regulatory framework light of the CE.

[6] Re-cycling according to the WFD means "any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations" (Article 3.17 of Directive 2008/98)

[7] Re-use according to the WFD means "any operation by which products or components that are not waste are used again for the same purpose for which they were conceived" (Article 3.13 of Directive 2008/98)

[8] Disposal according to the WFD means: "means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy." (Article 3.19 of Directive 2008/98)

1.5.3.4 Packaging

This thesis adopts the term packaging as defined by the PPWD:

> "All products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer" (Article 3.1 of Directive 94/96).

Additionally packaging is divided into primary, secondary and tertiary packaging, where primary packaging is referred to sales packaging or final user packaging, secondary packaging to grouped packaging and tertiary packaging to transport packaging (European Commission, 2021b). Although food packaging can constitute all three types of packaging, this research focused on packaging that is subject to the FCM/A requirements, which is most likely primary packaging (European Commission, 2021b).

1.6 Structure of this thesis

This thesis is divided into three sections.

The first part 'Introduction, Framework and Methodology' gives an overview of the main aims and objectives of the research and provide the necessary background to understand the research and the conclusion. In this first chapter 'Introduction' the problem, the research questions, and the overall methodology have been introduced. The subsequent second chapter 'Regulatory Framework for Food Packaging' presents the content of regulatory framework of food packaging. The third and last chapter of this part 'Methodological Approach' further introduces the Better Regulation Agenda of the European Commission and the BRIGHT method on which the subsequent research was based.

The second part 'BRIGHT' applies the BRIGHT method to identify, analyze and address regulatory issues and challenges. This part follows the four sequential phases of the BRIGHT method, which are 'Collecting Input', 'Zoom in on the bottleneck', 'Match the bottleneck with policy making cycle' and 'Propose better regulation input'. The first phase 'Collect Input' elaborates among others on the

collection and explains the approach to the identification of bottlenecks. Specifically, it shows the results of the PGRSI framework which is an adapted DPSIR framework developed for this research. In the second phase 'Zoom In' the identified bottlenecks are analyzed in more depth and classified accordingly. The third phase 'Matching' provides an overview of the current review of the FCM-Framework and identifies possibilities to address the bottlenecks in this review. The last phase 'Propose' presents possibilities to better regulate the identified bottlenecks.

The third and last part 'Conclusion, discussion and further research' first answers the research questions in chapter 8. Then in chapter 9 it discusses the findings in a broader context. The last chapter makes some additional remarks regarding the performed research and includes final recommendations.

2 Regulatory Framework for Food Packaging

This chapter provides a short introduction to the regulatory framework for food packaging.

Within the EU food packaging is subject to various regulations, directives and decisions, including the Framework on FCM, the Framework on Waste, the Framework on Chemicals and the Framework on Food. An overview of the applicable EU legislation from these frameworks is illustrated in Figure 1 and Table 4 below.

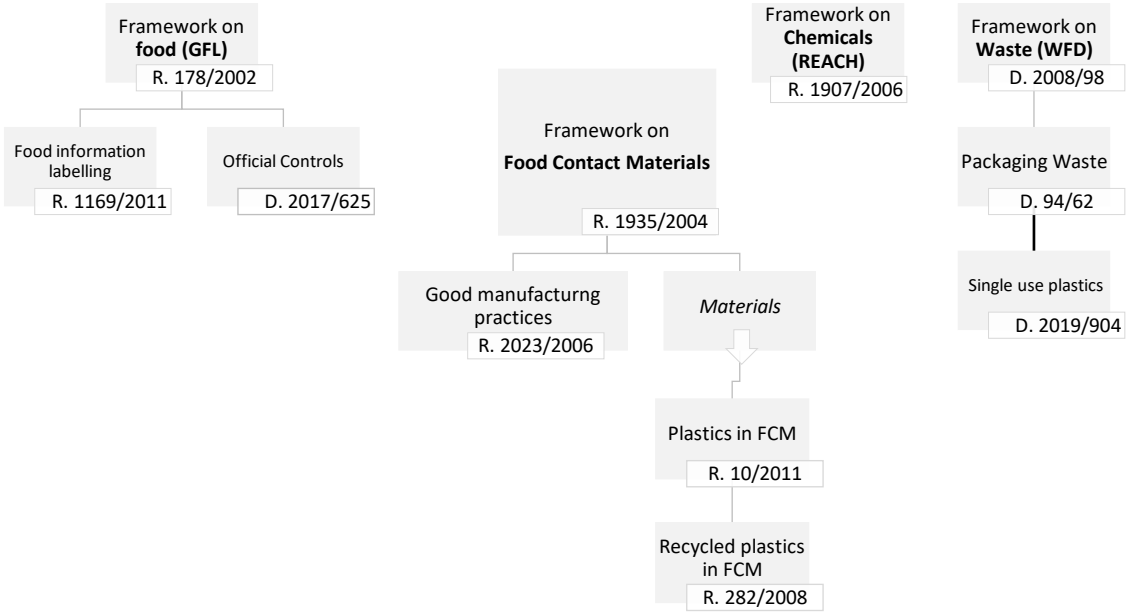

Figure 1 Overview of the Regulatory Frameworks applicable to Food Packaging as of May 1st, 2022

Legislation	Regulates	Life Cycle	Goals	Also includes (requirements on):
Framework on FCM				
Regulation 1935/2004 (FCM)	Food Contact Materials	Manufacturing, processing, distributing, and placing on the market	- Ensure safety - Ensure effective functioning of the internal market - Protection of human health	- Authorization of substances - Labelling - Declaration of Compliance - Traceability

			- Protection of the interests of consumers.	- Inspection and control measures
Regulation 2023/2006 (GMP)	Good Manufacturing Practices for Food Contact Materials	All stages of manufacturing, processing, and distributing	- Ensure conformity of GMP for FCM/A	- Quality assurance systems - Quality control system - Documentation
Regulation 10/2011	Plastics Food Contact Material	Manufacturing, processing, distributing, and placing on the market	- Set out basic rules for the manufacture of plastic materials and articles	- List of approved substances approved - Use restrictions - Migration limits - Multi-layer materials - Declaration of Compliance
Regulation 282/2008	Recycled Materials for Plastic Food Contact Materials	Recycling of plastic materials Manufacturing, processing, distributing and placing on the market	- Ensure the safety of recycled plastics for FCM/A	- Authorizaton of recycling processes - Official controls - Labelling - Decleriaton of Compliance
Framework on Waste	**Regulates**	**Life Cycle**	**Goals**	**Also includes (requirements on):**
Directive 2008/98/EC (WFD)	Waste	Waste	- Prevent and reduce the generation of waste and the impacts on the environment - Improve efficiency of resources	- Waste management - By-product criteria - End of Waste criteria - Extended user Responsibility - Prepare for reuse and

				recycling targets
Directive 94/62/EC (PPWD)	Packaging requirements and packaging waste	Design of packaging Management of packaging waste	- Prevent and reduce the effects of packaging and packaging waste on the environment - Reduce the final disposal of waste	- Collection targets - Recycling targets - User information
Directive 2019/904 (SUP)	Single Use Plastic Products	Design, placing on the market of single use plastic products Management of waste single use plastic product waste	- Prevent and reduce the impact of certain plastic products on the environment	- Design - Collection targets - Recycling targets - User information
Framework on Chemicals	**Regulates**	**Life Cycle**	**Goals**	**Also includes (requirements on):**
Regulation 1907/2006 (REACH)	All chemical substances	use and placing on the market of chemical substance	- Protection of human health - Protection of the environment - Promote free circulation of substances on the internal market - Enhance competitiveness and innovation	
Framework on Food	**Regulates**	**Life Cycle**	**Goals**	**Also includes (requirements on):**
Regulation 178/2002 (GFL)	Food	All stages of food production, processing and distribution	- Protection of human health - Protection of the interests of consumers - Free movement of food and feed	- General principles governing food and feed (safety) - Precautionary principle - Principles of risk analysis, risk management and

				risk communication - EFSA's mission and task - Establishment Rapid Alert system
Regulation 1169/2011 (FIR)	Food information and in particular food labelling	Food intended for the final consumer	- Protection of consumers health and interests	- Establishes the mandatory and voluntary food information that needs to be provided - Expression and presentation requirements
Regulation 2017/625 (OCR)	Official controls along the agri-food chain	All stages of food and feed production, processing and distribution	- Protection of human health - Protection of the interests of consumer - Ensure fair practices and trade	

Table 4 Overview of the EU regulation applicable to the uptake of SRM in Food Packaging throughout the entire life cycle

Each of these frameworks regulates a different aspect of food packaging throughout the packaging life cycle. As these life cycles interact and overlap as illustrated by Figure 2 below, all these frameworks must be taken into account in the manufacturing of food packaging material. As this research is part of the master program 'Food Safety Law and Regulatory Affairs' the main focus of the Regulatory Framework is on the framework for FCM, specifically on plastic and paper and board. For an understanding of the proceedings of this research, the other frameworks are shortly introduced. Additionally, there are other FCM regulations, harmonized standards for packaging and national legislations, but these are outside of the scope of this research to introduce in more depth.

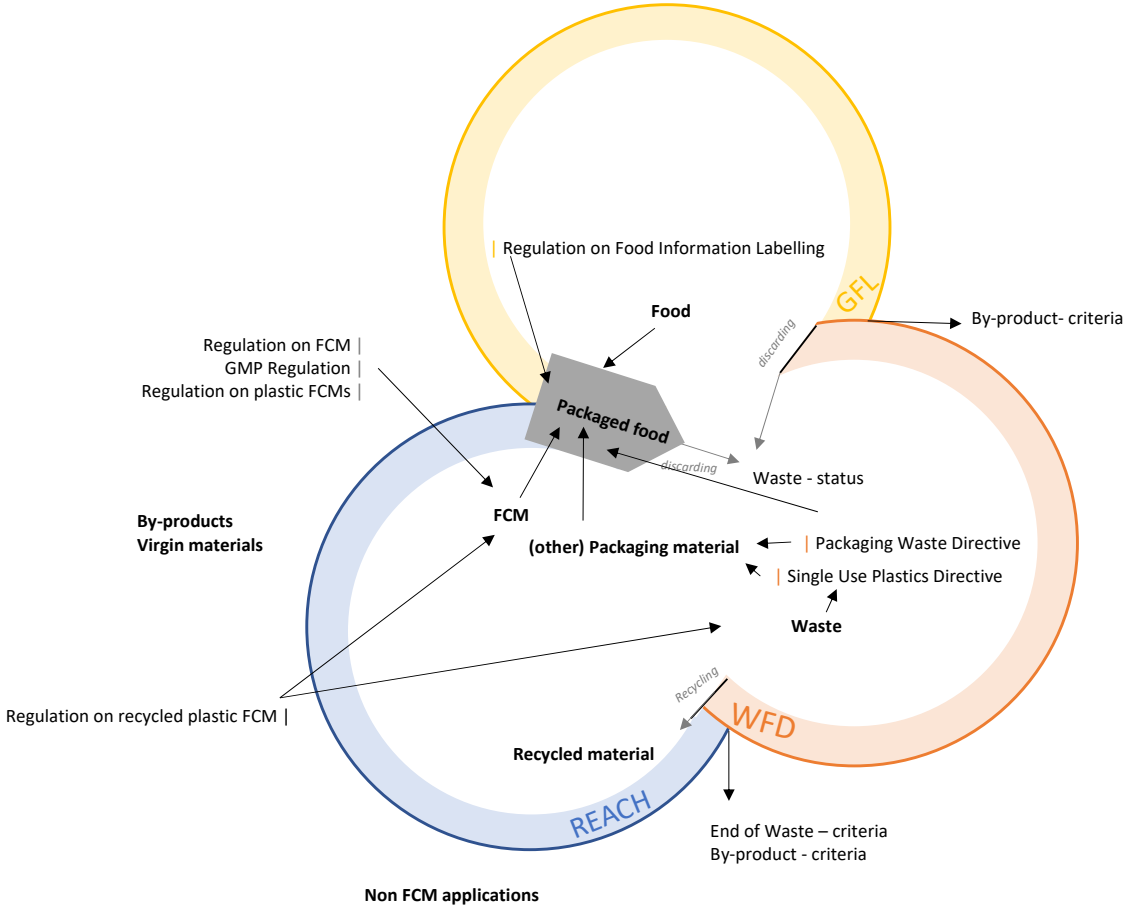

Figure 1 Graphical representation of the applicability of EU regulations on the uptake of SRM in Food Packaging throughout the entire life cycle. The Figure is an adaptation of the 'Graphical representation of the applicability of REACH and EU FCM regulations on (recycled) plastic FCM throughout the entire life cycle.' By De Tandt (et al., 2021) p 317.

2.1 Food Contact Material Framework

The cornerstone of European Food Packaging is the framework on FCM/A. FCM/A are all materials and articles that come into contact with food. These materials and articles can be in direct contact with food for example in the form of beverage bottles, coffee cups, packaging trays, films and wrappers. Also, FCM/A can be indirectly in contact with food for example when they are used in the manufacturing, preparation, storage, and distribution of food. FCM/A therefore also includes machinery to process food and housewares such as knives and coffee machines.

For the manufacturing of FCM/A a variety of raw materials and substances can be used such as plastic, paper, board, printing inks, adhesives and solvents. Under certain conditions FCM/A can transfer their substances into food. This phenomenon is called migration. The pattern of migration depends on the type of materials used, the type of food that it contact with, and the contact conditions between the material and the food product. The migration of these substances, either intentionally and non-intentionally added (IAS and NIAS), and their consequent presence in food, causes safety concerns. FCM/A are therefore subjected to rules regarding their manufacturing and subsequent placing on the market.

2.1.1 FCM Framework Regulation 1935/2004

All FCM/A must comply with the general requirements of the European Framework Regulation 1935/2004. Regulation 1935/2004 is the overarching regulation, regardless of the material, the food and the contact conditions. This regulation states that FCM/A in their finished state must comply with the general requirements regarding safety and integrity.

The basic safety principle is laid down in Article 3.1 of this regulation. It states that materials should not release constituents into food at levels harmful to human health. Neither should the material change the composition of food, taste, and odor in an unacceptable way.

To secure the safety and integrity of FCM/A and ensure the effective functioning of the market, the regulation also includes rules on labelling (Article 3.2 & Article

15), compliance documentation (Article 16), traceability (Article 17) and risk assessment and authorization of substances (Article 5). For example, articles and materials have to be accompanied by the wine and fork symbol indicating their allowed use for food contact.

As FCM/A can be manufactured out of different materials and substances, the framework regulation allows for further regulation of specific materials (Article 5). Annex I of the framework regulation identifies 17 different materials[9] for which specific measures may be adopted by the Commission. These specific measures might also be adopted for recycled materials of those identified materials. So far, only for the following five materials such additional European measures are in place:

- Plastics: Regulation 10/2011;
- Recycled Plastics: Regulaton 282/2008;
- Regenerated Cellulose: Directive 2007/42;
- Active & Intelligent Packaging: Regulation 450/2009;
- Ceramics: Directive 84/500.

In the absence of harmonized legislation, MS are allowed to further regulate food contact articles and materials. MS can thus adopt specific measures for materials

[9] 1. Active and intelligent materials and articles
2. Adhesives
3. Ceramics
4. Cork
5. Rubbers
6. Glass
7. Ion-exchange resins
8. Metals and alloys
9. Paper and board
10. Plastics
11. Printing inks
12. Regenerated cellulose
13. Silicones
14. Textiles
15. Varnishes and coatings
16. Waxes
17. Wood

and articles, such as the authorization of substances and migration limits. In all cases, the framework regulation and thus the scope of Article 3 regarding safety and integrity of the final FCM/A must be respected. Furthermore, FCM/A must be manufactured in compliance with good manufacturing practices (GMP).

2.1.2 Good Manufacturing Practices Regulation 2023/2006

GMP is a system for ensuring products are produced and controlled according to certain standards. The GMP requirements for FCM/A are laid down in Regulation 2023/2006. This regulation requires business operators to operate a documented quality assurance systems and quality control systems. In the annex of the regulation more detailed rules on the quality assurance system for plastic recycling processes are laid down.

2.1.3 Plastic FCM Regulation 10/2011

Plastic FCM/A are further harmonized by additional EU legislation. The Plastic Regulation 10/2011 further regulates plastic FCM/A.

The regulation of plastic FCM/A is most notably based on a positive list system. The Regulation contains a list of substances (Union list) that are allowed to be used in the manufacturing of plastic packaging under given restrictions for the use. The list contains (a) monomers or other starting substances; (b) additives excluding colorants; (c) polymer production aids excluding solvents and (d) macromolecules obtained from microbial fermentation. The restrictions include use restrictions, specific migration limits (SML) for the substances, food contact conditions and/or residual content limitations. The SML's are set by the European Food Safety Agency (EFSA) based on a risk assessment. Furthermore, the regulation contains specific overall migration limit (OML) of 10 mg/dm2 for the final plastic article. Next to migration limits, substances must be suitable for the intended and foreseeable use (Article 8). This means that, if the FCM/A foreseeably will contain foods that are hot, liquid, and or fatty, the substances used in the manufacturing and the final FCM/A should be in compliance with such conditions.

The Plastic FCM Regulation furthermore specifically addresses NIAS. According to the regulation, NIAS may be present in plastics (Article 6), but the migration of

these NIAS must be in compliance with the safety requirements of Article 3 of the Framework Regulation 1935/2004. Also, they need to be assessed in accordance with internationally recognized scientific principles on risk assessment (Article 19).

The Plastic Regulation furthermore lays down specific provisions for multi-layer material (Article 13 & 14) and additional traceability and compliance requirements in the form of a 'Declaration of Compliance' (DoC) (Article 15 & 16).

2.1.4 Recycled Plastic FCM Regulation 282/2008

Next to plastic FCM/A, also recycled plastic FCM/A are further regulated by EU legislation. Regulation 282/2008 sets out rules for post-consumer mechanically recycled plastic materials and articles intended for contact with food.

The main requirement of Regulation 282/2008 is that recycled plastic materials and articles may only be placed on the market if they contain recycled plastic from an authorized recycling process. To obtain an authorization, the recycling process must fulfil certain requirements regarding the recycling input and the recycling process (Article 4). EFSA evaluates these requirements and adopts an opinion either in favor or against the authorization of the recycling process (Article 5). The EU Commission ultimately must authorize the process and add it to the list of authorized recycling processes (Article 6).

Recycled plastic articles and materials remain subjected to Regulation 10/2011 and Regulation 1935/2004. This means that plastic recyclates must comply with the same requirements as 'virign' plastics such as positive lists, OML's and SML's, traceability, DoC's, avoidance of odor and flavor transmission. After recycling, the plastic recyclate can thus only contain monomers and additives which are listed in the positive list of Regulation 10/2011 in order to be used in a plastic FCM/A.

2.1.5 Member State Legislation

The FCM framework allows for further MS legislation in non-harmonized areas. This is not only limited to PRM, but also to SRM and requirements such as Doc.

To date (July, 2022) only a few areas for FCM are harmonized on an EU level, such as the above mentioned plastics and recycled plastics FCM/A. The non-harmonized materials and articles are subject to the Framework Regulation 1935/2004, and applicable national laws in MS. The national regulatory landscape is fragmented. Some MS have no additional measure, whereas other MS have additional recommendations or legislation, such as France, Netherlands, Germany and Italy (Simoneau et al., 2016). A further discussion of this landscape is beyond the scope of this research.

2.2 Waste Framework

For the inclusion of SRM into food packaging, also the framework on waste comes into play, as this framework includes material life cycle requirements. This framework is thus important in establishing when a material is not or no longer waste and instead can be considered an SRM. Furthermore, next to waste management requirements, this framework also includes sustainable production and consumption requirements in order to prevent waste generation and enable reuse, recycling and recovery. For this research the Waste Framework Directive (WFD; 2008/98), the Packaging and Packaging Waste Directive (PPWD; 94/62) and the Single Use Plastics (SUP) Directive (2019/904) will shortly be introduced.

2.2.1 The Waste Framework Directive 2008/98

The WFD is the legal framework for treating waste and sustainable material management. Most notably, the management of waste is based on the waste hierarchy principle (Article 4). The waste hierarchy establishes an order of preference for managing and disposing of waste. It consists of five steps of which the first is the most favored option and the fifth the least favored option. Most importantly waste generation should be prevented (step 1: prevention), or a product or material should be reused (step 2: reuse) in order to prevent it from becoming waste. Then waste material should be recovered, so the materials can be reprocessed into new products, materials or substances or

Figure 3 Graphical Representation of the Waste Hierarchy (European Commission, n.d.)

used for energy production (step 3: recycling, step 4: other recovery). Only when that is not an option a waste should be disposed (step 5: disposal).

To facilitate this waste hierarchy and the material management in the CE, the WFD makes a distinction between waste and by-products (Article 5), and includes criteria when a product has reached the status of end-of-waste (Article 6). Furthermore, the WFD includes requirements for extended producer-responsibility schemes (Article 8) to strengthen prevention, re-use, prevention, recycling and other recovery of waste and includes preparing for reuse and recycling targets. A further discussion of these requirements is beyond the scope of this research.

2.2.2 Packaging and Packaging Waste Directive 94/62

The PPWD further regulates packaging management and packaging waste management. The PPWD includes specific extended producer-responsibility requirements and prevention, re-use, recycling, and recovery targets for packaging.

Most notably, the revised PPWD (Directive_2018/852) increased the minimum recycling targets for packaging waste (see table below). By 2025, 65% of the packaging waste should be recycled (Article 6.f of Directive 2018/852). Additionally, 50% of the plastic waste and 75% of paper and cardboard (Article 6.g of Directive 2018/852) should be recycled. For 2030 these targets are increased to respectively 70%, 55%, and 85% (Article 6.i of Directive 2018/852).

Recycling target	31 December 2025	31 December 2030
All Packaging	65%	70%
Plastic	50%	55%
Wood	25%	30%
Ferrous metals	70%	80%
Aluminum	50%	60%
Glass	70%	75%
Paper and Cardboard	75%	85%

Table 5 Recycling targets in the revised Packaging and Packaging Waste Directive (Article 6 Directive 2018/852).

2.2.3 The Single Use Plastics Directive 2019/904

The SUP Directive established a framework for the management of single use plastic. It introduces requirements, in line with the waste hierarchy, on the prevention, reuse and recycling of plastics products.

Most notably it includes market restrictions for certain plastic products, collection targets for bottles and recycling uptake targets: By 2025 MS of the EU must ensure that 77% of beverage bottles are separately collected in such a way that they can be recycled (Article 9.1.a of Directive 2019/904). To achieve that objective, MS can for example establish deposit-refund schemes for plastic beverage bottles (Article 9.1 of Directive 2019/904). For 2030 this target separate collection target is increased to 90 %. The collection targets are accompanied by design requirements. From 2025, PET beverage bottles must contain at least 25% recycled content (Article 6.5.a of Directive 2019/904) For 2030 this target is increased to 30%.

Collection target	2025	2029
Beverage bottles	77%	90%

Table 6 Separate collection target for beverage bottles in Annex Part F in the Single Use Plastics Directive (Article 9 Directive 2019/904)**.**

Recycling uptake target	2025	2029
PET bottles	25%	30%

Table 7 Recycled plastic uptake target for beverage bottles in Annex Part F in the Single Use Plastics Directive (Article 6.5 Directive 2019/904).

2.3 Chemicals Framework

The manufacturing of food packaging is also subjected to the framework on chemical substances.

2.3.1 REACH Regulation 1907/2006

The main regulation in the EU on chemicals is the REACH Regulation (1907/2006). REACH stands for Registration, Evaluation, Authorization and Restriction of Chemicals. The regulation regulates the production and placing on

the market of chemical substances.Under REACH, all chemicals produced and registered within the EU are covered. The hazards and risks are recorded and kept up to date in a file. On that basis, (partial) restrictions of prohibitions can be imposed on substances. For example, when substances are considered carcinogenic, mutagenic or reprotoxic. For these substances REACH has established certain categories among which a category for substances of very high concern (SVHC). REACH also includes communication and documentation obligations.

Most chemicals used to manufacture FCM and other food packaging materials are also subject to the REACH registration system. Although a more in-depth explanation of REACH is beyond the scope of this thesis, REACH is noteworthy as this framework together with the WFD regulates the material life cycle. REACH is related to the manufacturing and use of stage of substances, whereas the WFD is related to the waste stage of substances. This means that, when a material (and its substances) enters the waste stage, it is subjected to the WFD until it ceases to be waste. The recovery and recycling processes such as the recycling of plastic food packaging, is however subjected to both REACH and WFD requirements. A more in depth explanation between the interplay between REACH, the WFD and the FCM for recyclers has previous been done by the De Tandt (et al., 2021).

2.4 Framework on Food

Lastly, food packaging is subjected to the framework on food.

2.4.1 General Food law Regulation 178/2002, Food Information Regulation 1169/2011 and the Official Controls regulation 2017/625

The General Food Law (GFL; Regulation 178/2002) is the foundation of the Food and Feed Law in the EU. It lays down the general principles and requirements of food law. In Article 14 it codifies the fundamental food safety requirement by stating that "food shall not be placed on the market if it is unsafe" (Article 14.1 of Regulation 178/2002). In Article 14.2 it specifies that "Food shall be deemed to be unsafe if it is considered to be (a) injurious to health or (b) unfit for human consumption". Article 14.5 then further elaborates that "in determining whether any food is unfit for human consumption, regard shall be had to whether the food is unacceptable for human consumption according to its intended use, for

reasons of contamination, whether by extraneous matter or otherwise, (…). As migration of FCM into food is a source of food contamination, the safety requirements laid down in Article 14 apply to final FCM / food packaging.

Furthermore, the framework on food lays down expression, labeling and presentation requirements for food packaging (Article 16 of Regulation 178/2002) which is supplemented by requirements in Regulation 1169/2011 of the provision of food information. Specifically, Regulation 1169/2011 on providing food information to consumers lays down mandatory requirements for food packaging.

Lastly, the framework on food also sets out common rules for the enforcement of rules along the agricultural-food chain. The Official Controls Regulation (OCR; 2017/6250 also specifically applies to FCM/A (Article 1.2.a[10]) and Recycling plants for FCM (Article 10 of Regulation 282/2008[11]).

[10] Article 1.2 of Regulation 2017/625: "This Regulation shall apply to the official controls performed for the verification of compliance with the rules, whether established at Union level or by the Member States, to apply Union legislation, in the areas of: a) (…)
articles intended to come into contact with food;"

[11] Article 10.1 of Regulation 282/2008 "The official control of a recycling plant and converter shall be performed in accordance with the rules laid down in Regulation (EC) No 882/2004 and shall include in particular audits as control technique as specified in Article 10 of Regulation (EC) No 882/2004."

3 Methodological Approach

This chapter explains the methodological approach applied in this thesis. This thesis is based on better regulation. In the first section it introduces the better regulation principles of the European Commission, shortly reflect the development of the Better Regulation Agenda and explains the link between better regulation, the Green Deal and the FCM regulatory framework. In the second section it introduces the research methods adopted in this thesis and elaborate on the BRIGHT method that is used and adapted in this thesis.

3.1 Better Regulation Principles

Better regulation is both an aim and a process. The EU is one of the institutions that applies the better regulation principles and tools. The EU policy goals and objectives are pursued through a diverse set of (legal) actions. The European Commission is one of the leading organizations shaping these policies and (legal) actions. The adoption of these actions affects millions of citizens, business, and public authorities in the EU and beyond. The idea behind better regulation is delivering high-quality Union actions that has added value for European citizens and that delivers on the set goals and objectives effectively and efficiently. Better regulation therefore sets out both how new EU actions should be designed as well as how existing policies and actions should be reformed. Therewith, better regulation is both an objective in itself as well as a policy with instruments that influences other policies (European Commission, 2015a, 2021a; Golberg, 2018).

3.1.1 The Better Regulation Agenda

The Better Regulation Agenda of the European Commission has developed over multiple decades and under successive European Commissions. It emerged in the early 2000's in reaction to increasing complex and interconnected policy challenges as well as against increasing political decision-making critique towards the EU from MS, businesses and citizens (Golberg, 2018). After the 2001 White Paper on European Governance, the Prodi Commission (1999-2004) introduced the first 'Better Regulation' package in 2002 to add to the democratic legitimacy of the European Commission. The subsequent Barosso (2004-2014), Juncker (2014-2019) and von der Leyen (2019-2024) Commissions made continuous efforts to develop the Better Regulation Agenda, by complementing it with

instruments and objectives throughout the policy cycle to increase the efficiency and effectiveness of EU actions. Examples of the instruments include the 2012 launch of the REFIT-program, the publication of the Better Regulation Guidelines and Toolbox in 2017[12], the launch of the Have Your Say web portal in 2017 and the establishment of the Fit for Future Platform (F4F) in 2020[13]. The latest communication on better regulation has been published in 2021 under Commission von der Leyen which also updated the Guidelines and Toolbox (European Commission, 2015a, 2017a, 2017b, 2021a, 2021c, 2021d; Golberg, 2018; Schout & Swieter, 2018).

The Better Regulation agenda has now become a collection of varied goals. The main idea is that EU action should be based on the knowledge of the expected economic, environmental, and social impacts of the EU intervention, and that EU actions should avoid unnecessary burdens for citizens, business, and public authorities. These actions should therefore be designed in such a way that the policy goals and objectives are achieved in an efficient, effective, and coherent manner. This means also that legislation should be comprehensible, clear, and accessible.

The Better Regulation Agenda also sets out how new actions should be prepared, how existing action should be assessed and revised and how transparency and participation in the regulatory process should be ensured. This regulatory process under better regulation is based on four continuous phases: formulation, adoption, implementation and evaluation. Each of these phases has its own tools that ensure that the better regulation principles are considered. For an overview of the four phases and the accompanied tools see Figure 4 Better Regulation Roadmap and Opportunities for the different type of Bottlenecks (KED, n.d.b)' in section 3.2.2.3 below).

[12] The Better Regulation guidelines and Toolbox have been revised in 2021 in response the 2021 retter regulation communication. The 2021 guidelines simplified the process of consulting with Stakeholders. Most importantly, the Call for Evidence (CFE) replaced Inception Impact Assessments and Evaluation Roadmaps and consolidated all public consultations into a single call.

13 The F4F platform helps to identify bottlenecks stemming from the implementation of EU legislation. It examines unnecessary burdens and whether existing laws can achieve their objectives efficiently and as such supports the simplification work of the European Commission. It also examines whether EU laws are future-proof.

One of the principles that is central when engaging in the better regulation policy cycle is the 'evaluate first' principle. The Commission applies this principle to make sure lesson from past EU action aree considered and regulatory failures are considered when (re)designing EU action. This means that in the evaluation phase the European Commission evaluates whether the existing European laws have met the policy goals and objectives in an efficient, effective, and coherent manner. In other words: whether the actions have met the needs of citizens and business at minimum costs. 'Evaluate first' is furthermore a method to gather information from different sources. The 'evaluate first' principle is therefore central in this thesis.

3.1.2 Better Regulation of FCM in light of the Green Deal and Farm to Fork strategy

Since Commission-Von der Leyen took office in November 2019, the Green Deal has been central to European policy. The Green Deal is a comprehensive climate and environment program aimed at making Europe a climate neutral continent by 2050 with a modern competitive CE based on resource efficiency. The transition to this must take place in a fair, social and sustainable manner. As part of the Green Deal, the Farm to Fork Strategy (European Commission, 2020a), the Second Circular Economy Action Plan (European Commission, 2020b) and the Chemical Strategy for Sustainability (European Commission, 2020c) were presented in 2020, each covering different policy areas. Among the planned actions announced in these strategies is the regulatory revision of the FCM-framework, as well as the introduction of other FCM related initiatives. An overview of planned actions related to FCM/A and SRM in FCM in these strategies can be found in Table 8 below.

Policy	Publication Date	Planned action	Indicative time when published
A new Circular Economy Action Plan	11th of March 2020	Initiative to substitute single-use packaging, tableware and cutlery by reusable products in food services[14]	2021
		Methodologies to track and minimize the presence of substances of concern in recycled materials and articles made thereof[15]	2021
		Policy framework for bio-based plastics and biodegradable or compostable plastics[16]	2021
		Harmonised information systems for the presence of substances of concern [17]	2021
		Mandatory requirements on recycled plastic content and plastic waste reduction measures for key products such as packaging, construction materials and vehicles[18]	2021/2022
Farm to Fork Strategy	20th of May 2020	Proposal for a revision of EU legislation on Food Contact Materials to improve food safety, ensure citizens' health and reduce the environmental footprint of the sector	Q4 2022
Chemicals Strategy for Sustainability Towards a Toxic-Free Environment	14th of October 2020	Proposals to extend the generic approach to risk management to ensure that consumer products do not contain chemicals that cause cancers, gene mutations, affect the reproductive or the endocrine system, or are persistent and bioaccumulative and toxic; assess the modalities and timing to extend the same approach to further chemicals including those affecting the immune, neurological or respiratory systems and chemicals toxic to a specific organ	2022
		Update information requirements to allow the identification of endocrine disruptors in relevant legislation, particularly under REACH,	2022

[14] These planned actions are related to FCM/A, but it is not communicated which regulatory framework are involved with these actions. The actions might thus not involve the FCM-framework directly.

[15] See footnote 1414

[16] See footnote 14

[17] See footnote 14

[18] See footnote 14

		legislation on cosmetic products, food contact materials, plant protection products and biocidal product	
		Introduce or reinforce provisions to take account of the combination effects of chemicals in water, food contact materials, food additives, toys, detergents, cosmetics	2022
		Address the presence of PFAS in food by introducing limits in the legislation on food contaminants	2022

Table 8 Overview of planned actions on the better regulation of the FCM-framework in the Green Deal strategies

To effectively deliver on the goals of the Green Deal, better regulation both as an aim and process features at the center of the Green Deal strategies. In the communication of the Green Deal the Commission states that the better regulation tools should provide the basis for making efficient policy choices at minimum environmental, social, and economic costs. Especially evaluations should be used to systematically identify inconsistencies in the current legislation and, assess the coherence between current legislation and new priorities (European Commission, 2019). Specifically, the annex of the Farm to Fork Strategy and the and Chemical Strategy, which feature the draft actions, states that all "the measures presented in this action plan need to be carried out in line with the better regulation principles and subject to evaluations and impact assessments as appropriate" (European Commission, 2020a, 2020c).

3.2 BRIGHT Method

This research applied the BRIGHT tool to engage with both the better regulation agenda as the principles for the review of the FCM framework.

3.2.1 Introduction into BRIGHT

BRIGHT stands for Better Regulation Insight Tool. It provides a method to assess regulatory problems in the practical application of EU law and to identify where in the better regulation cycle these bottlenecks could potentially be addressed. BRIGHT is developed by Kenniscentrum Europa decentraal (KED) in response to the Pact of Amsterdam (2016) and the launch of the Urban Agenda for the EU

(UAEU). It is based on the European Commissions' Better Regulation Agenda, Guidelines and Toolbox. The purpose of BRIGHT is to assist urban authorities and other stakeholders engaging with better regulation. BRIGHT guides how problems with the implementation and application of EU actions could be addressed. As BRIGHT is a structured working method to link bottlenecks to opportunities within the better regulation policy cycle, BRIGHT is used in this research to identify opportunities for the better regulation of SRM in food packaging in the FCM-review (KED, n.d.a, n.d.b, n.d.c, 2019, 2020; Urban Agenda for the EU Circular Economy & KED, 2019, 2020).

3.2.2 Steps of the BRIGHT method

The BRIGHT methods consist of four sequential phases. Each phase consists of several individual steps. This section gives a summary of these phases and steps. A full explanation of the BRIGHT method can be found on the website of BRIGHT at bright-tool.eu/bright.

3.2.2.1 Collect Input

The first phase of the BRIGHT method 'Collect Input' is dedicated to collecting, evaluating, and selecting possible bottlenecks. This phase is based on three steps:

1. Collect and Evaluate;
2. Organize collected bottlenecks;
3. Assessing EU Competence.

In this phase information from experts and stakeholders on possible bottlenecks is collected and suitable bottlenecks are identified. As the bottlenecks can originate from different (regulatory) sources it is necessary to assess whether the bottlenecks are appropriate for better regulation. To be selected as a suitable bottleneck the bottleneck must thus hold a regulatory component and fall under EU competence. Therefore, BRIGHT advices to structure information by subject matter and legal text. Furthermore, BRIGHT advices to evaluating the main findings in this phase to ensure that the bottlenecks are widely held and are tangible issues.

3.2.2.2 Zoom in

The second phase of the BRIGHT method 'Zoom in' is dedicated to analyzing the selected bottlenecks in more-depth. This phase is also based on three steps

4. Map the relevant EU legal framework;
5. Identify issues in the EU legal framework;
6. Classify the type of bottleneck.

In this phase the problematic regulatory actions are identified that cause or indirectly contribute to the identified bottleneck. As actions can be complementary and interconnected, the regulatory bottleneck is not necessarily limited to one element of EU legislation. Besides establishing a causal relation between an element of EU legislation and a bottleneck, this phase also assesses how the element in EU legislation may cause a bottleneck, and in what way these bottlenecks could potentially be resolved. BRIGHT advices to collect additional information in the form of focus sessions or questionnaires in this phase.

The final step in this phase is classifying the bottlenecks in different categories to assess their better regulation potential. The method proposes a classification that matches the better regulation policy making cycle. It however acknowledges that there are numerous ways to classify bottlenecks and recommends that the given classification is extended by additional classification.[19] More information on the classification provided by BRIGHT is given in the following section below.

Classification of regulatory bottlenecks

BRIGHT distinguishes three types of bottlenecks that are suitable for better regulation: Legal Technicality Issues, Legal Objective Issues, and Legal Clarification Issues.[20] These legal bottleneck categories are further divided in

[19] The classification of the regulatory issues as given by BRIGHT in Table 9 Types of Legislative Bottlenecks (KED, n.d.a.)does not correspond one to one to a type of legal problem. A language and terminology issue is not necessarily a lack of legal clarification. Such an issue could also be classified as a lack of rules or an interconnection issue. Additional classification therefore might be necessary for clarity and structure of the identified bottlenecks.

[20] The Bright tool does not specify the other types of regulatory issues, but this could for example be legal compliance issues such as incorrect or incomplete transposition of directives by MS or lack or inconsistent

subcategories. BRIGHT distinguishes Efficiency of Legislation, Effectiveness of Legislation and Interconnection of Legislation under Legal Technicality Issues, Legislative Purpose and Lack of Necessary Rules under Legal Objective Issues, and Lack of Interpretation under Legal Clarification Issues. An explanation of these subcategories is given in Table 9 below.

Types of Legislative bottlenecks
Legal Technicality Issues
Efficiency Legislation The lack of efficiency in legislation is an issue which can hinder the fulfillment of the legislative purpose. In other words, the measures established by the legislation are not efficient in achieving its goal. This can create unnecessary administrative and regulatory burdens and as a consequence, unnecessary work 'on the ground'.
Effectiveness Legislation This characterization is related to the output of the legislation, which is not creating the desired effects. The measures established by the legislative act do not achieve the purpose set out in the act and this creates unwanted effects 'on the ground'.
Interconnection The issue of interconnection refers to the (problematic) overlap between two pieces of legislation. For example, two legislative acts which maintain two different definitions for the same thing. Organizations have to comply with both definitions, thus creating an unnecessary regulatory burden. Another example is the double obligation created by State aid rules and rules concerning the European Structural and Investment Funds. Beneficiaries often have to comply with these two different sets of rules, which disincentives them from applying to the ESI-funds to begin with.
Legal Objective Issues
Legislative Purpose An issue with the legislative purpose of a piece of legislation refers to a problem with the goal it aims to achieve. The problem thus is not the performance of the legislative act, but rather its substantive content. Naturally, this can relate to a part of a legislative act, the whole legislative act or an entire legislative area.
Lack of Necessary Rules The issue of a lack of necessary rules means that an area which could use EU legislation is now unregulated. Another option falling into this category would be EU legislation that is outdated and not fit for purpose. The lack of rules or the presence of outdated rules creates unwanted situations which can be best solved at the European level.

enforcement by MS, European Institutions or the European Court. These legal compliance issues can be related to the Legal Technicality, Legal Objective and Legal Clarification issue, for example when the design of the law is identified as problematic, or when there is limited guidance. However, it can also have different causes such as resource or technical issues. These issues can for example be tackled by Better Governance (KED, 2021). Better Governance is a dimension introduced by KED in the Quick Scan for the UAEA for issues that are (indirectly) related to EU legislation or policy, but lack a clear EU legislative cause. More information on Better Governance is given in section 3.2.4

Legal Clarification Issues
Lack of Interpretation The issue of a lack of interpretation is not a legal problem, but a lack of explanation or guidance. This means that it is not clear for those affected by the legislation how they should comply with its provisions. More guidelines are needed by the Commission in order to clarify the legislation. This should ensure compliance.

Table 9 Types of Legislative Bottlenecks (KED, n.d.a.)

3.2.2.3 Matching

In the third phase of the BRIGHT method the bottleneck(s) are linked the better regulation agenda. This phase is also based on three steps:

7. EU policy making cycle and Better Regulation;
8. Tracking the status of EU legislation;
9. Matching your bottleneck using Better Regulation Roadmap.

In this phase the status of the relevant EU-legislation for the bottlenecks is determined. Based on this status within the better regulation policy cycle, opportunities for better regulation can be identified. The opportunities are based on the four phases of the cyclical steps of EU-policy making cycle. These four phases are:

1. Formulation;
2. Adoption;
3. Implementation;
4. Evaluation.

In the formulation phase the European Commission analyses whether a legislative initiative is necessary and drafts a new legislative proposal according. The phase starts with the Commission making its intention known to propose an EU act. This can be either in the form of a policy communication or a roadmap[21]. The formulation phase ends with the Commission publishing a proposal for an EU act. During this phase there are some better regulation opportunities for stakeholders. To both the roadmap, the impact assessment as well as to the

[21] The BRIGHT roadmap in Figure 5 features an Inception Impact Assessment but these are not part anymore of the 2021 Better Regulation guidelines and toolbox

legislative proposal, feedback can be provided by stakeholders. Furthermore, depending on the consultation strategy also stakeholder consultations can take place.

In the adoption phase the proposed EU act is sent to and scrutinized by the Co-legislators of the EU (the European Parliament and the Council of Ministers). In principle, the Commission prepares the proposal in the formulation phase and the Parliament and the Council of Ministers ultimately amend and adopt the act in the adoption phase. During this phase there are some better regulation opportunities for stakeholders, but they require influencing EU institutions during the legislative process.

In the implementation phase the EU legislation is in force. This means there is less legislative and policy making activity and thus less better regulation opportunities. The exception is for delegated and implementing acts which lay down details to the regulatory framework. Delegated and implementing acts are adopted via comitology or expert groups. Stakeholders can provide input during the consultation period of new delegated or implementing acts. Furthermore, there can be better regulation opportunities in the F4F Platform.[22]

In the evaluation phase the European Commission evaluates how EU legislation has performed by means of an Evaluation or a Fitness Check. During this phase there are some better regulation opportunities for stakeholders, as feedback to the evaluation roadmaps can be provided. Furthermore, the Commission likely consults stakeholders during the Fitness Check.

Based on the evaluation, the European Commission can consider entering the formulation phase to amend, replace or propose EU legislation. An evaluation or a Fitness check is however not immediately followed by the formulation phase. Furthermore, the evaluation and formulation phase can overlap due to political urgencies or timing constraints. Evaluations activities and impact assessments

[22] The F4F Platform is since May 2020 the successor of the REFIT platform.

can then be carried out in a 'back-to-back' manner (European Commission, 2021c)

Each of these four phases thus hold better regulation opportunities. An overview of these opportunities is given in Figure 4 below.

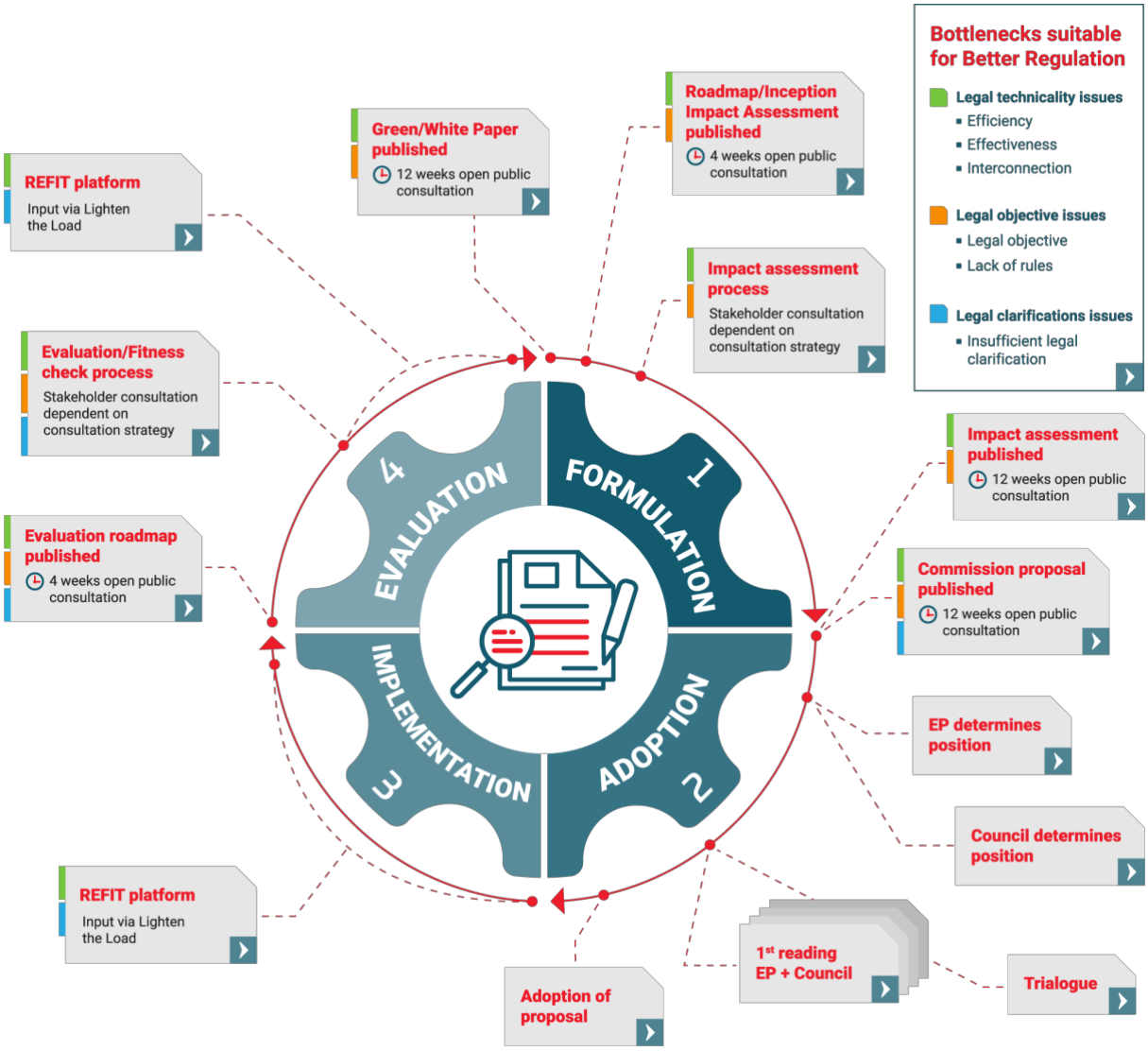

Figure 4 Better Regulation Roadmap and Opportunities for the different type of Bottlenecks (KED, n.d.b) based on the 2017 Guidelines and Toolbox

BRIGHT specifically puts attention to the opportunities located in the open public consultations. Consultations are activities aimed at collecting input and views from stakeholders, experts and citizens in a specific context. They are an obligatory activity to almost every part of the EU policy cycle in light of the Better Regulation Agenda. The consultations are held on the 'Have Your Say'

website and are based on specific questions or documents such roadmaps and impact assessments. For example, a consultation can be about "experiences with existing EU legislation in the context of an Evaluation or Fitness Check" or the "potential impacts of potential new EU legislation in the context of an Impact Assessment" (KED, n.d.c). BRIGHT provides the following overview of consultation opportunities: (see Table 10 below).

Category	Type of feedback	Time to give feedback
Roadmaps, inception impact assessments, evaluation roadmaps	Open feedback on finalized document	4 weeks
Impact assessment	Structured feedback on aspects of impact during the drafting of the document	12 weeks
Commission proposal and impact assessment	Open feedback on published proposals and finalized IAs	up to 8 weeks after the last language version is published.
Evaluations and Fitness checks	Structured feedback on aspects of the evaluation	12 weeks
Draft regulations, directives, implementing and delegated acts	Open feedback on draft-acts	4 weeks
Other opportunities: green papers, white papers and other non-legislative documents	Structured feedback on other documents than mentioned above	12 weeks
Call for evidence[23]	Open feedback on the 'call for evidence'	4 weeks

[23] 'Calls for evidence' (CFE) are introduced in the 2021 Toolbox and therefore not included in the BRIGHT roadmap. CFE's are part of the beginning of the evaluation phase for both new and existing policies and legislation. There are four distinct types of 'call for evidence' documents:

i. call for evidence for an initiative without an impact assessment
ii. call for evidence for an impact assessment
iii. call for evidence for an evaluation/fitness check
iv. call for evidence for an evaluation/impact assessment run in parallel

The Commission uses call for evidence to explain why a particular initiative, evaluation, or fitness check is being prepared and what it aims to achieve with it. Through open feedback or a questionnaire the views of stakeholders on the subject matter or issue are gathered. Calls for evidence can be simultaneously carried out with a public consultation. The overall duration for feedback is 12 weeks.

	document or public consultation questionnaire	

Table 10 Overview of open public consultation opportunities (KED, n.d.c) updated with the 2021 Better Regulation toolbox

Next to the public consultations BRIGHT focuses on the F4F platform[24]. Specifically, the F4F platform Simplify! portal allows to share ideas and feedback to topics that are not currently being addressed by the above-mentioned public consultation opportunities.[25]

Lastly, BRIGHT mentions additional stakeholder engagement activities such as seminars or conferences that are organized by the Commission in the formulation phase to discuss and collect input. These specific activities however differ per better regulation policy initiative.

According to the BRIGHT roadmap the specific better regulation input opportunities depend on the type of bottleneck as classified in the 'Zoom In' phase. For example, Legal Clarification Issues are not suitable to be addressed during the formulation phase and Legal Objective Issues are not suitable to addressed in the F4F platform. Legal Technicality Issues however can be addressed at every better regulation input opportunity.

3.2.2.4 Propose

In the fourth and final phase of BRIGHT, the bottlenecks are addressed. Addressing bottlenecks depend on the input opportunity moment and the kind of

[24] The F4F platform does not feature in the BRIGHT roadmap. Instead, the figure presents the REFIT platform. The REFIT platform has been succeeded in May 2020 by the F4F Platform. The BRIGHT roadmap has not been updated with the establishment of this Platform and the publication of the 2021 Better Regulation toolbox and guidelines.

[25] There are some further limitations to which topics input can be delivered. According the Have Your Say Simplify! Portal suggestion on the following topics will also not be taken into consideration:

a) relevant legislation that is being examined by the European Parliament and Council as part of the legislative procedure at the time the suggestion is submitted;

b) relevant legislation that has been implemented for less than two years before the input is provided, as in this case it would be premature to draw conclusions on its implementation;

c) an issue that is the national responsibility, or an issue linked to national implementation in a specific Member State. However, if the issue in question occurs in several Member States, it might be taken into consideration;

d) issue that is subject to a planned or ongoing consultation of the social partners

input the Commission is looking for. BRIGHT gives examples of the different form input can take such as drafting position papers, infographic, responding to questionnaire, giving elevator pitch, and engaging in seminars and meetings.

3.2.3 First Adapted BRIGHT element: PGRSI Framework to identify regulatory bottlenecks

The BRIGHT method is adapted in this research to enable the identification of regulatory bottlenecks methodically. BRIGHT is a structured working method to link bottlenecks to opportunities within the better regulation policy cycle. The method is however not clear how these bottlenecks should be systematically identified. In the 'collect input' phase the BRIGHT method only advises how data should be collected (using focus groups and legal texts), but on how this data should subsequently be analyzed the method remains vague. BRIGHT does suggest making use of framework tables to organizing bottlenecks by subject matter and legal text first, before this data is analyzed in more depth. The method however does not give any guidance on the subsequent more in-depth analysis. The research therefore adapted the BRIGHT method with an analytical framework to integrate the better regulation aims into the research as well.

For the analytical framework, this research drew on methods used by the European Commission in Better Regulation Toolbox. The Better Regulation Toolbox sets out analytical tools and methods to carry out ex-ante and ex-post analysis of EU intervention. As many EU interventions deal with a complex issue, the toolbox recommends using visual aids and models to illustrate the issue, facilitate understanding, and communicate the subsequent intervention-logic. The toolbox specifically recommends problem trees, specific and general objective trees, and intervention logic diagrams, which are inter alia based the identification of drivers, objectives, actions, consequences and impact (European Commission, 2017b, 2021c). The choice of the model depends on the variables and indicators, to be screened.

For the identification and assessment of environmental impacts the toolbox recommends among others the DPSIR framework (European Commission, 2021c). The DPSIR framework is a widely adopted framework for environmental policy management. It has been developed by the European Environment Agency

(EEA) to gain understanding in complex environmental issues resulting from economic, social and environmental systems and inform policy makers on the impact of political choices. This research adapted the DPSIR framework in the PGRSI framework to better fit the objectives and approach of this research. The following sections will further introduce the original DPSIR framework, the reasons for adapting the DPSIR framework and the resulting PGRSI framework.

3.2.3.1 Introduction into the DPSIR framework

DPSIR stands for driving forces (D), pressures (P), state (S), impacts (I) and responses (R). These links and interactions in the DPSIR framework are shown in Figure 5 below. In short, social and economic developments exert pressure on the environment. Consequently, the state of the environment changes. This leads to an impact on human health, welfare, ecosystems and resources. Those impacts may trigger a response by actors such as policymakers, society and stakeholder to address the undesired impacts. Those responses feeds back on the driving forces, the state or on impacts directly.

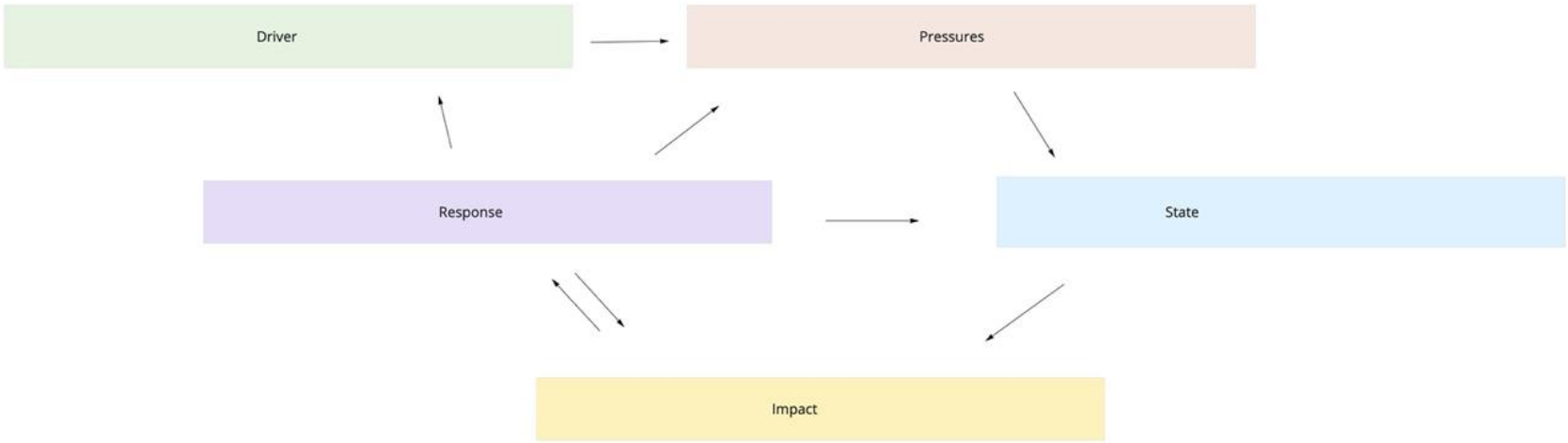

Figure 5 Graphical representation of the DPSIR framework as used by the EEA.

The DPSIR framework is a helpful method for this research to identify bottlenecks. The framework provides a way for organizing information related to different interrelated systems and subsequently identify relations among them. As the manufacturing and placing on the market of food packaging is a complex interaction between regulatory, economic and technical systems the DPSIR framework provides a framework to understand the interaction between these systems and their elements. Specifically, it provides an insight how regulatory requirements contributed to the uptake of SRM in food packaging.

Subsequent, the framework provides a basis for distilling (regulatory) bottlenecks and their origins. Identify the origins and consequences of complex and interrelated problems helps to distinguish between cause, problem and consequence. This especially, the understanding and defining the problem correct, is a crucial step in better regulation. If a problem and its causes are poorly understood, it is difficult to design solutions and policies that will be effective on the ground (European Commission, 2017b, 2021c). By separating information in pressures, drivers, impacts and responses this framework helps to distinguish between causes, problems and consequences and identify the causes in the regulatory framework. As the framework has been used to understand and map risks and uncertainties that are associated with the use and regulation of novel materials (Hansen & Baun, 2015), the DPSIR framework also specifically holds potential to understand and identify regulatory bottlenecks related to the use of SRM in food packaging.

To fit the objectives of this research better, the DPSIR framework however had to be adapted into the PGRSI framework. Although DPSIR is a helpful method to describe the current state of play and show how policies and other changes interact, it is hard to combine DPSIR with the output-result-impact approach that is used in the problem trees, objective trees, and intervention logic diagrams of the Better Regulation Tolbox (Trinomics, 2020). In the original DPSIR regulatory responses feature as the last chain of causal links due to which the effects of these responses are not separated from other consequences. To be able to identify origins and consequences of specifically regulatory bottlenecks better, the FCM regulatory framework therefore must be more central.

Adapting the DPSIR framework has been done before. The Environmental Protection Agency (EPA) of the United States (US) for example expanded the DPSIR framework to the Eco-Health DPSIR framework to explicitly include Human and ecosystem Health and incorporate sustainability concepts (Bradley & Yee, 2015). Redesigning the DPSIR framework into this PGRSI Framework is thus an excellent bridge between the mostly used driver-problem-consequence model of the European Commission for Better Regulation (European Commission, 2017b) and the DPSIR framework used by the European Environmental Agency.

3.2.3.2 The PGRSI framework

PGRSI stands for Pressures (P), Goals (G), Regulation (R), State (S) and Impact (I). The PGRSI framework integrates these elements into a framework in which these elements intact with each other. The definitions of the elements are based on the definition in the original DPSIR-framework by the EEA and the Eco-Health DPSIR of EPA. Contradictory to the original DIPSR framework, this regulatory response is not the consequence of the linear line of actions resulting from impacts. Instead, the regulatory response and state is more central in the PGRSI framework. This is because the PGRSI framework provides a snapshot of the current regulation of the SRM in FCM and subsequent impacts of the regulation on the uptake of SRM. An overview of the PGRSI framework can be found in the figure below.

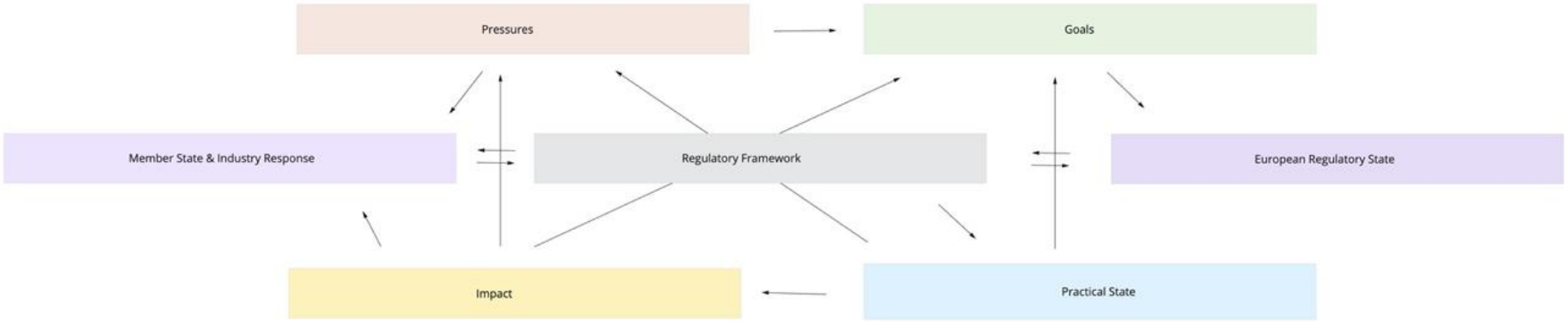

Figure 6 Graphical representation of the PGRSI framework

The following section presents the elements of the PGRSI framework shortly. As the PGRSI framework is developed for the regulation of SRM in FCM, the definitions of these elements are specifically designed to fit this research. More details on these elements are applied in this research can be found in section 4.2

Elements of the PGRSI framework

Pressures (P): Pressures and Developments

Pressures or developments are forces with certain (negative) effects. Specifically, pressures have an effect on the environment, the economy and or human health. These pressures can be the effect of actions happening in other systems, as well as effects resulting from elements in the framework. Pressures can be expressed in the form of concerns by different actors such as science and academia, business operators as well as consumers. Pressures call for regulatory action in one form or another. The response to pressures is mostly formulated in the form of goals and commitments.

Goals (G): Goals and Commitments

Goals are needs that actor are trying to meet regarding. Goals and commitments motivate actors to engage in various activities and to respond to certain developments such as pressures. In other words; goals and commitments are a description of the desired state. These goals and commitment are for example voluntary and regulatory commitments that have been expressed in policies documents, in regulations and other communication. The pressures these goals respond to are not necessarily the pressures that are identified in the first element of the PGRSI framework. The pressures and development to which goals and commitments respond can also originate from other systems.

Regulation (R): European Regulatory Framework, and MS and Industry Responses.

Regulation is the result of actions of policymakers in the EU, MS and other actors to address (undesired) pressures, goals and impacts. It thus reflects the current regulatory framework in the form of rules, procedures and obligations. To provide a better overview the Regulation element is divided in the EU Regulatory Framework, and MS and Industry Responses. The MS and Industry Responses

are specifically a response to the EU Regulatory Framework and its impacts resulting from the Practical State.

State (S): Practical State
The State reflects the current functioning of the Regulatory element. It thus provides a reflection of the performance of the that Regulation element in practice. The effects of the Regulation Element on the Practical State can occur in a certain sequence (primary, secondary, and tertiary effects). Also, in the Practical States difficulties such as unclarities in the Regulation element are for example pointed out.

Impacts (I)
Impacts reflect how the State impacts the different systems. It differs from the Practical State in that element Impact focuses on the effect of the Practical State on the system, whereas the State maps the possibilities and the status quo. The impact is thus the result of the status quo as described in Regulatory Framework and the Practical Status.

3.2.4 Second Adapted BRIGHT element: Extended Bottleneck Classification

The BRIGHT method bottleneck classification is adapted in this research to better enable identification of better regulation opportunities. In phase two of the BRIGHT method, the identified bottlenecks are classified to distinguish the better regulation potential of a bottleneck. The e-learning tool of the BRIGHT method only distinguishes Legal Technicality, Legal Objective and Legal Clarification issues. The method states that this is a suggested classification as these bottlenecks specifically hold better regulation potential. BRIGHT does leave room for additional categorization.

From the BRIGHT assessment of the Urban Agenda initiatives (KED, 2021) a more comprehensive bottleneck categorization based on the 'Better Regulation', 'Better Funding & 'Better Knowledge' pillars that are introduced in the Pact of Amsterdam (2016) can be distinguished. In this assessment it becomes clear that Regulation & Legislation issues can be addressed by Better Regulation, Funding & Finance Issues by Better Funding and Knowledge & Technical issues

by Better Knowledge. An overview of the categorization of Bottleneck Issues and Actions can be found in Figure 7 below.

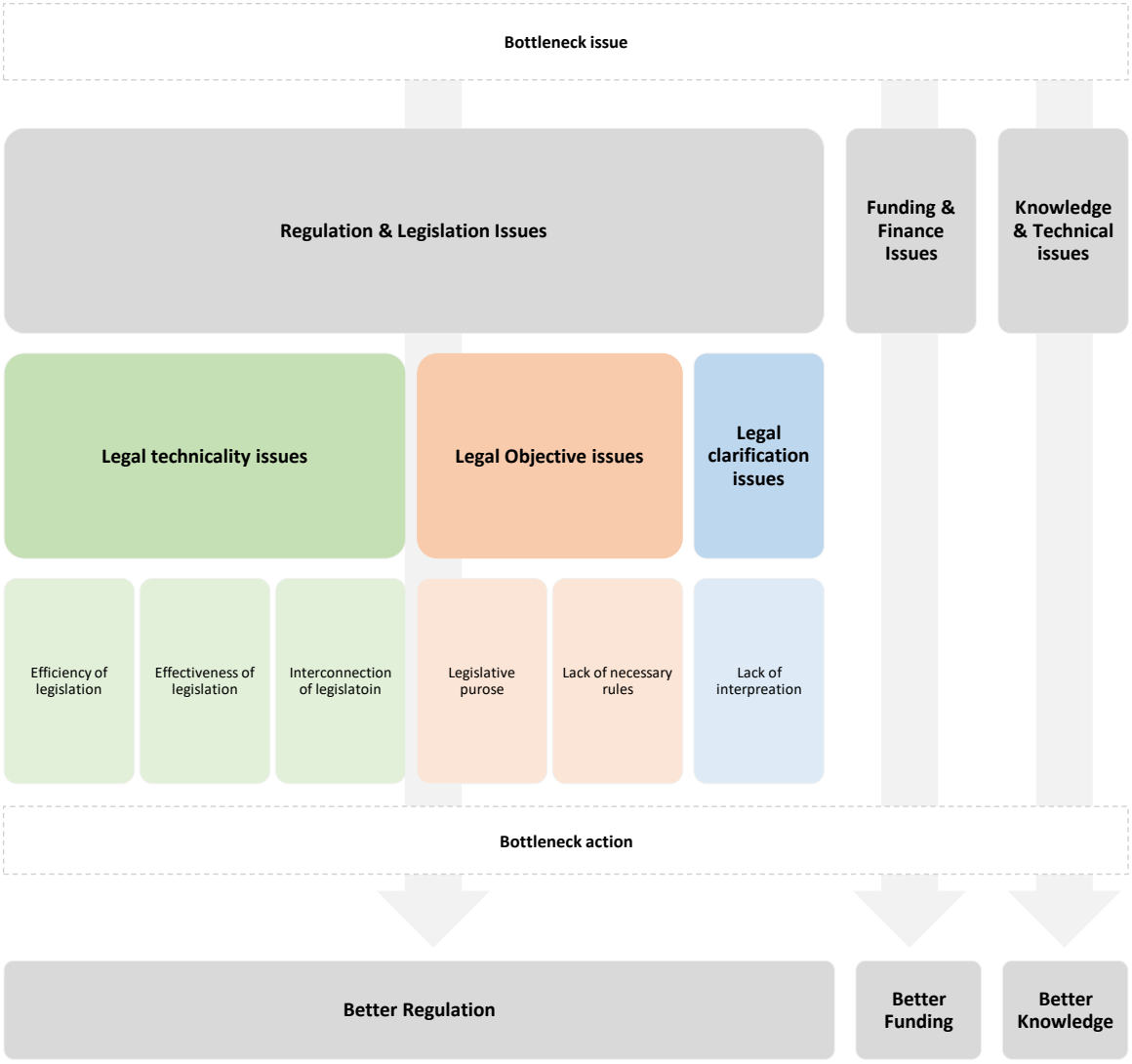

Figure 7 Graphical representation of Bottleneck Issue and Action categorization according to BRIGHT method and based on the assessment of the Urban Agenda initiatives (KED, 2021) and the Pact of Amsterdam (2016).

As this thesis is focused on the possibilities to better regulate SRM in food packaging material and is not necessarily solely focused on only the better regulation possibilities, this thesis adapted the bottleneck categorization of BRIGHT with an additional bottleneck issue category and an additional bottleneck action categories. It introduces the category 'Lack of Guidance' as a legal clarification issue. It introduces 'Better Governance' as an issue action category and it identifies Deregulation, Reregulation and Improve Implementation as Better Regulation actions. A graphical representation of the extension can be found in Figure 8 below.

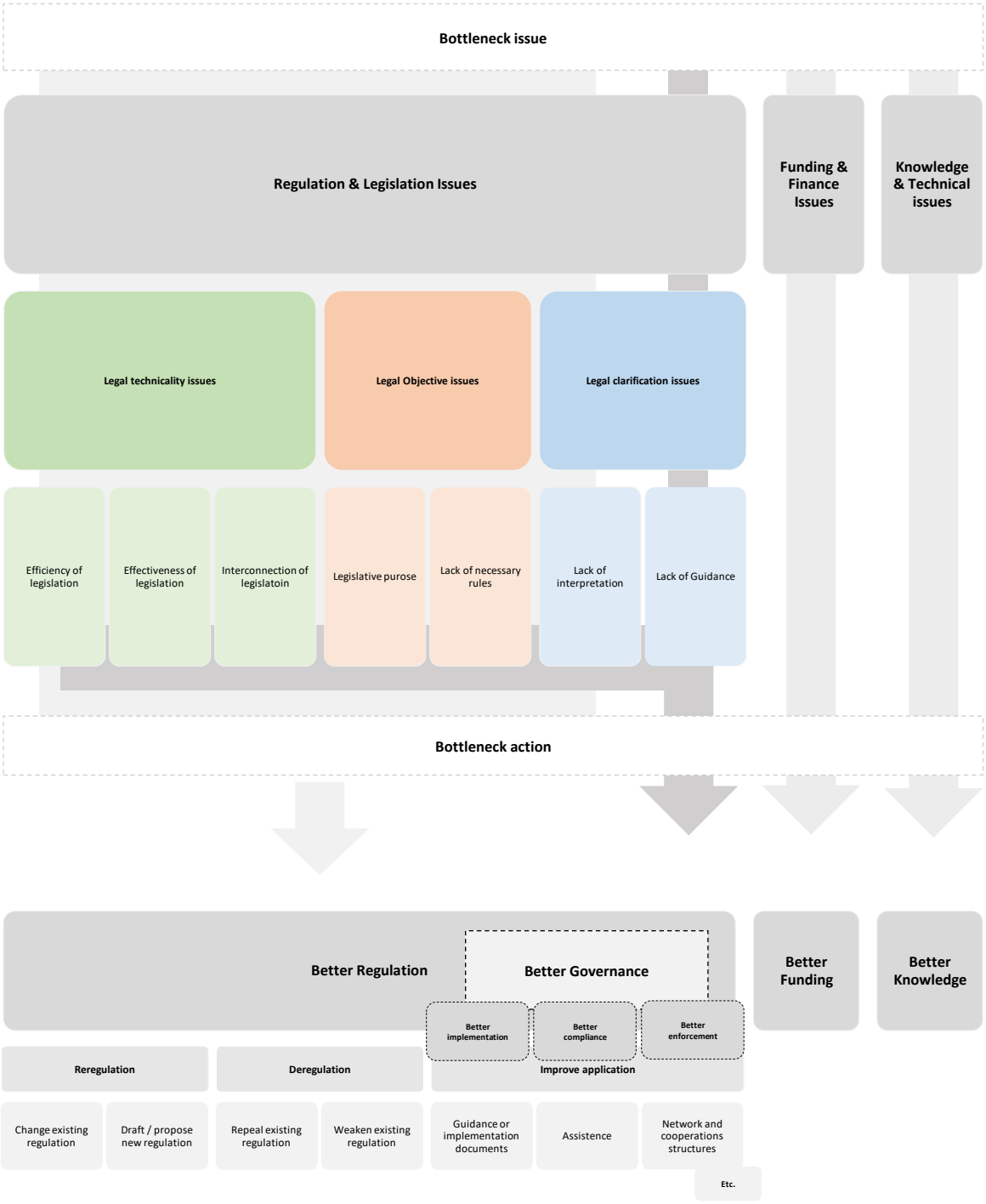

Figure 8 Graphical representation of adapted Bottleneck Issue and Action categorization of the BRIGHT method

First it introduces 'Lack of Guidance' as a legal clarification issue. Lack of Guidance distinguishes itself from lack of interpretation, as lack of interpretation addresses legal unclarities in the application of the regulatory framework. Examples are difficulties regarding the interpretation of key concepts or definitions resulting from legal obligations. Lack of Guidance goes beyond these legal unclarities and addresses other implementation and application issues by guidance documents such as implementation guidelines or best practice communications. Other regulation and issues such as efficiency, effectiveness or interconnection problems can also be addressed by Better Governance which is explained in the following section.

Second, it introduces Better Governance as an issue action. The assessment of the Urban Agenda initiatives (KED, 2021) introduces the action Better Governance next to Better Regulation, Better Funding and Better Knowledge. Better Governance is suitable for bottlenecks that are related to EU legislation and policy but do not require addressing EU legislation per. These bottlenecks can thus have an EU regulatory component in practice, but the origin of the issue is not located in the EU regulatory framework itself. Instead, issues can for example be related to the incorrect, late or inconsistent implementation of EU legislation by a MS. Such and other issues can be addressed by better implementation, better compliance or better enforcement through the establishment of guidance documents or cooperation structures between stakeholders. Better Governance in the strict sense is thus not a Better Regulation action as it is not aimed at improving EU legislation, but falls under the Better Regulation aim because its' actions aim at improvement in the application of the regulatory framework. Therefore, Legal Technicality, Legal Objective and Legal Clarification issues might also hold a Better Governance potential next to a Better Regulation potential. Better Governance is however not introduced as a separate action category because the Ljubjana Agreement (2021), which is an updated version of the pact of Amsterdam, is continuously based on the three pillars of Better Regulation, Better Funding and Better Knowledge. Furhtermore, it can also be seen as an improve application action step, which is explained in the next paragraph.

Lastly, it introduces Better Regulation actions. The BRIGHT method focuses in the first three phases on the identification of bottlenecks and of input opportunity moments to address them. In the fourth phase 'propose' the method is however relatively silent how to address these bottlenecks with better regulation to facilitate a better regulatory framework. This thesis therefore extended the BRIGHT Bottleneck action categorization with three possible better regulation action categories: Reregulation, Deregulation and improve application (Radealli & Meeuwse, 2009). Each of these actions hold sub-actions as well. Under reregulation possible sub-actions are change existing legislation or propose new legislation, while under deregulation weaken existing legislation or repeal legislation are possible actions. Improve application sub-actions are for example the establishment or improvement of guidance or interpretation documents, the provision of better assistance or the set-up of cooperation structures.

These better regulation actions can both address a whole act as well as specific articles or paragraphs within an act. Extending BRIGHT with these action categories make the issue categorization also more convincing and intuitively. Even though the issue categorization and categorization do not correspond one-to-one, the issue classification helps to understand why a certain action needs to be taken. For example, an interconnection issue might result in deregulation in one regulatory framework, while it can lead to reregulation in another regulatory framework. Other better regulation action examples are recasting and codification actions of incorporation of previous amendments in a new law to address Legal Technicality Issues. Under this adapted BRIGHT categorization recasts would define as reregulation, whereas codification can be seen as a form of deregulation. This is because a recast requires an impact assessment according to the Better Regulation Toolbox, whereas that is not needed for codification due to the lack of significant impact (European Commission, 2021c). It needs to be mentioned that regulation and deregulation don't have a political value, despite deregulation can be seen as an indicator for the 'one in-one out' better regulation approach of the European Commission. These action categories in the end aim to facilitate the better regulation aim of designing quality EU actions which thus focuses on the quality and not the quantity of the regulatory framework.

PART 2 APPLICATION OF THE ADAPTED BRIGHT METHOD

4 Collect Input: Identification of Bottlenecks for the uptake of SRM in FCM

This chapter presents the methodological aspects applied in the research to collect, identify and evaluate bottlenecks for the uptake of SRM in FCM/A. The chapter is based on the BRIGHT phase 'Collect input' and integrates the three sequential steps of this phase. It presents in section 4.1 'Data Collection' which information has been used and in section 4.2 'Data analysis' how this information was analysed to subsequently identify bottlenecks.

4.1 Data collection

This research was based on a mix of sources for the 'input collection'. The main data is collected from stakeholders drawn from the contribution to three public FCM consultations. As these public consultations hold limitations (see section 4.1.2 below) this data is supplemented by other sources[26] such as research articles,[i] documents indicated in the consultation, government publications, stakeholder reports and other (grey) literature. These sources were used to compare or complement information, both in this 'Collect input' as well as in the 'Zoom in' phase.

4.1.1 Public Consultations of the FCM-review

This research drew information from three public FCM consultations: the contributions to the FCM review, the FCM Inception Impact Assessment and the Revision of Regulation 282/2008[27]. The contributions and their annexes to these consultations were publicly available on the Have Your Say Portal Website of the European Commission. Table 11 provides an overview of the details of these consultations.

[26] According to the European Commission Better Regulation Toolbox (2017) peer-reviewing or benchmarking information with other surveys/studies or consultation activities can significantly enhance the quality of the evaluation.

[27]The revision of Regulation 282/2008 has been defined by some stakeholders as a recast. As the draft makes substantive amendments to all the provisions of the earlier act it replaces and repeals, and the first recital does not indicate that the new legal act constitutes a recasting of the earlier act, it can according to Interinstitutional Agreement of 28 November 2001 on a more structured use of the recasting technique for legal acts, not be defined as such. This thesis therefore adopts the definition Revision.

Consultation	FCM-evaluation	the FCM-inception impact assessment	Revision of Regulation 282/2008
Source	https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/1212-Evaluation-of-Food-Contact-Materials-FCM-_nl	https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12497-Herziening-van-de-EU-regels-voor-voedselcontactmaterialen_nl	https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12013-Voedselveiligheid-gerecycleerd-plastic-in-levensmiddelenverpakkingen-bijgewerkte-regels-_nl
Feedback period	11 Februari 2019 - 06 May 2019	18 December 2020 – 29 January 2021.	06 December 2021 - 18 January 2022
Analyzed content	451 contributions[28] + annexes	302 contributions + annexes	96 contributions + annexes
Results	See Annex 1	See Annex 2 Results Consultation FCM Inception Impact Assesment	See Annex 3 Results Consultation Review of Regulation 282/

Table 11 Details of the consulted FCM-consultations for this research

4.1.2 Data limitations

The data collected from these public consultations holds several limitations.

[28] Only the following columns of the available excel file have been analysed

- GL If you wish to add further information ó within the scope of this questionnaire, to substantiate or exemplify any of your answers ó please feel free to do so here
- FX Are†you aware of any contradictions, gaps, overlaps, inconsistencies or missing links within the EU FCM legislation?
- FZ Are†you are aware of any contradictions, gaps, overlaps, inconsistencies or missing links between the EU FCM legislation and other EU legislation, in particular on chemical safety or products? This may include other areas, which you consider should be legislated together with FCM in the same legislation or legislative framework?
- DT/DU Have†you or a business you represent encountered problems in placing an FCM on the EU market, which is not subject to EU specific rules or is subject to national specific rules?
- ED/EEHave you or a business you represent encountered problems in placing an FCM on the EU market, which is subject to EU specific rules?
- CL If you wish to add further information ó within the scope of this questionnaire ó please feel free to do so here

First and foremost, none of the public consultations did address the uptake of SRM in food packaging or FCM/A directly. The issues regarding SRM therefore had to be distilled and inferred from the stakeholder statements and other related bottlenecks. For example, based on the critiques to certain proposal in the review of Regulation 282/2008, bottlenecks in the current version of this regulation could be distilled. Nevertheless, the consultations did provide a good insight in the overall functioning of the FCM even though the functioning of the SRM within that framework had to be read between the lines.

Additionally, the public consultations were designed with specific purposes. As a results, not all the information was (directly) applicable to or sufficient for this research. The public consultation on the FCM evaluation was designed as a questionnaire, mostly consisting out of closed questions. Some of the contributions pointed out that not all the questions were fully relevant regarding the regulatory changes that were needed (E#37), not all the questions were open to all stakeholders (E#134), some questions were ambiguous which holds a risk of misinterpretation (E#95, E#136, E#195) that not all the questions had the opportunity to bring accurate responses regarding the regulatory changes that might have been needed (E#37). Therefore, not all the contributions to the questionnaire have been studied.[29] The data collection of the FCM evaluation was instead limited to the of the open-ended questions. As there was an opportunity to upload additional comments in the form of an annex, additionally all the annexes have been studied. The same limitation hold for the public consultation on the FCM Inception Impact Assessment in which the Commission asked for specific feedback on the identified problems and the proposed way forward. The responses to this consultation followed the structure of the impact assessment. This meant that recycling practices were mainly addressed under heading "7. Rules do not encourage development of safer and more sustainable alternatives" (European Commission, 2020d). These have therefore mainly been studied whereas the other answers were either quickly scanned or omitted in this research.

[29] See footnote 28

Furthermore, as two public consultations targeted the whole FCM framework, many other related problems and bottlenecks were identified in the contributions. Most of these problems were already identified by the JRC baseline study (Simoneau et al., 2016,) and subsequently adopted by the European Commission in the Inception Impact Assessments (see section 6.1). These problems have in some cases been taken up in the PGRSI analysis (see section **Error! Reference source not found.**) but were not further scrutinized in this research unless there was a specific link with SRM.

The analysis of the public consultation has also limited itself to contributions given in English, Dutch and German.

Lastly, the public consultation of the Review of Regulation 282/2008 ran from December 6th 2021 till January 18th, 2022 This was during the Christmas holidays and New Year. As D#17 pointed out, this limited the time of contribution to 4 weeks. Considering the draft was published relatively unannounced, this time might not have been sufficiently for stakeholders to contribute.

4.1.3 Literature used

The literature used was based on, but not limited to, a literature search in the Wageningen (WUR) Online library and google scholar based on (a combination of) the following terms: food contact material or FCM, packag*, recycl* or secondary raw material, EU or European Union, barrier or challenge or issue or problem, regul* or legisl*. It is supplemented by documents, reports and responses the European Commission has indicated on the website of the "Evaluation and Revision of EU-rules on FCMs (European Commission, n.d.a)," and other documents that contributions to the public consultation of the FCM and the interviews have indicated. As such, the literature review includes research articles, European commission reports, government reports as well as business reports.

The literature search has considered publications written in English and Dutch. The literature search has taken only publications written after 2004 into account because that is the year the FCM-framework was implemented.

An overview of the literature consulted can be found in the bibliography.

4.2 Global analysis of bottlenecks within the current FCM Regulatory Framework

To identify bottlenecks from the collected data, the data was analyzed in a three step-approach using a set of circular economy indicators and the PGRSI Framework. This approach was used in order understand, identify, and structure bottlenecks.

4.2.1 Step 1: Analyze public consultations with circular economy indicators

In the first step the contributions to the consultations were analyzed along a set of indicators to distill the appropriate information. As this research focused on both the use of SRM in food packaging as well as the sustainable transition towards a European CE, this research applied indicators that were based on different elements of the CE.

4.2.1.1 Circular Economy Indicators

The CE has been defined as "a systemic approach to economic development designed to benefit both economy, society and the environment" (Ellen MacArthur Foundation, n.d.). The European Commissions' toolbox developed a set of indicators using this economic, social and environmental divide to study negative consequences of a situation for society, individuals or sectors (European Commission, 2017b) As these indicators of the European Commission coincide with the CE elements as defined by the EllenMacArthur Foundation, these indicators were seen as appropriate to apply in this research. To additionally look at the impact of and on the CE itself, this set of CE indicators has been extended with a fourth element called 'circular economy.' These CE indicators derived from the Circular Economy Monitoring Framework (European Commission, 2018b).

The resulting indicator (or here subindicators) used in this research are listed in Table 12 below.

Indicator	Subindicator	Examples and Keywords
Economic	Cohesion	Specific regions and sectors

Economic	Competitiveness	Ability and incentives of suppliers to compete, property rights
Economic	Compliance costs	Information obligations, waiting time, testing , monitoring, enforcements , reduced market access, reduced investment innovation
Economic	Economic dependence	on other countries
Economic	Fraud (intended non-compliance)	Financial and non-financial impact
Economic	Functioning of the internal market and competition	Impact on the free movement of goods, services, capital and workers, Prices, trade barriers for new or foreign suppliers or service providers, anti-competitive behaviour, choice. National rules, administrative costs for information requirements
Economic	Information and Communication technologies	ICT management, retrieval and exchange of information, data, interoperability, artificial intelligence
Economic	Innovation and research	Barriers or incentives for the investement / introduction / development of R&D new production methods, technologies, products,
Economic	Operation conduct of SME's	Additional costs and burdens, Reduced or increased compliance costs, ntermediate consumption, capital or labour
Economic	Public authorities	Additional governmental administrative and financial burden,
Economic	Regulatory burdens pressure	Regulatory requirements, uncertianty
Economic	Third and developing countries	Third and developing countries
Economic	Trade and investment flow	EU and international, treating of imported products vs domestic prodcuts, Imports, exports, trade barriers,
Social	Income distribution, social protection and social inclusion	inequalities, Distribution of incomes and wealth, access to and quality of basic goods and services, social protection benefits,
Social	Cohesion	Specific regions and sectors
Social	Consumer	Prices, Quantity, Quality, Choice, Availability Commercical practices,
Social	Crime, terrorism and security	improve or hinder security, impact on crime or terrorism risks, criminal's chances of detection or his/her potential gain from the crime, security interests,
Social	Culture	Preservation of cultural heritage
Social	Education, traning and skills	Skills used or demanded by individuals,
Social	Employment	New jobs created or lost

Social	Governance and good administration	involvement of stakeholders, equal footing, diversity, autonomy of the social partners, information to the public
Social	Public health & safety and health systems	Individuals, Populations, Particular risk groups
Social	Third and developing countries	employment, social protection and poverty impacts
Social	Working conditions	wages, labour costs or wage setting mechanisms, occupational health, labour standards, job standards and quality
Environment	Animal welfare	safety of food and feed, animal welfare
Environment	Biodiveristy	species/varieties/races in any area, endangered species or their habitats
Environment	Energy	Consumption and efficiency, demand
Environment	Chemicals	Environmentally harmful or toxic substances
Environment	Agriculture and food	Food waste
Environment	Environment	Quality of natural resources (eg water, air, soil) , Pollution, Impacts, risks
Environment	Land use	new areas of land, land use change
Environment	Third and developing countries	environment in third countries
Environment	Climate	Emission of green house gases, emission of ozone depleting substances, adapt to climate change
Circular Economy	Competition and innovation	Investment, patents,
Circular Economy	Primary Raw Materials	Use, accessibility, market, demand, trade, supply
Circular Economy	Production and consumption	Products, markets, (relative) prices, incentives, taxes
Circular Economy	Secondary Raw Materials	Use, accessibility, market, demand, trade, supply
Circular Economy	Waste management	Waste production, waste treatment, waste disposal waste reduction, recycling rates

Table 12 Circular Economy Indicators as derived from the Better Regulation toolbox and the Circular Economy monitoring Framework (European Commission, 2017b, 2018b) used in this research to analyze the data from public consultations and literature and structure in the PGRSI Framework.

4.2.1.2 Approach

The contributions to the public consultations were read in two rounds. In the first round the contributions to the FCM evaluation and the FCM Inception Impact Assessment were exploratively analyzed to understand the different elements and interactions at play regarding the regulatory framework in theory and in practice. The contributions provided a view into the existing supply chain, the available materials and technologies and a preliminary set of problems for FCM. In the second round all three public consultations were analyzed more

systematically using the CE indicators. It needs to be mentioned that in the second round the data was analyzed with the PGRSI framework in mind. This impacted the data scrutinized from the consultations.

4.2.1.3 Results

The results of the data collection and analysis can be found in Annex 1, 2 and 3 to this thesis. The resulting information has subsequently been gathered and structured in PGRSI framework. More information on this follows in the following sections.

4.2.2 Step 2: Fill in the PGRSI Framework

In the second step the information from the public consultations and the literature was structured along the elements of the PGRSI framework and the CE indicators.

4.2.2.1 Approach

The information from the public consultations was structured along the PGRSI framework applying the definitions of the PGRSI elements as set out in section 3.2.3.2.

Specifically, here pressures refer to factors that are related to the use of SRM in FCM (and subsequent food packaging); These use of SRM for food packaging causes certain pressures on the environment, society and the economy. These pressures can be related to the use of SRM in general, but also to the use of SRM over PRM. The pressures resulting from waste and packaging waste as described in the introduction of this thesis were excluded in the PGRSI analysis, as they are part of another regulatory framework and therewith not subjected to the "system" under scrutiny. However, commitments resulting from pressures in this system that relate to the uptake of SRM in FCM were taken up in the following element goals and drivers. As the pressures were not used to identify bottlenecks but instead used to understand the current (regulatory) state and former intervention logics, the identification of pressures didn't hold the main priority during this research. The identified and presented list of pressures is therefore

non-exhaustive. The pressures have been mainly derived from FCM recitals, literature and policy documents, but also from some FCM contributions.

The goals are an expression of the different policy goals the European Commission expresses in both existing regulations (recitals and in 'subject scope and matter' Articles of legislation) as well as published communications such as the Green Deal strategies and Better Regulation publications. Goals are a response to different pressures and other developments. The goals had already been mostly identified in Table 4 and Table 8 of this thesis. As the goals were not used to identify bottlenecks but instead used to understand the current (regulatory) state and former intervention logic, the identification of goals didn't hold the main priority. The identified and presented list of goals is therefore non-exhaustive.

The Regulation element reflects the current regulatory framework for SRM in FCM. The basic of this regulatory framework have already been identified in Chapter 2 of this thesis. Furthermore, the specific additional MS requirements are not all identified or listed in detail. The presented list regulatory requirements and procedures is therefore not a complete representation of all the rules, procedures and obligations.

The state describes the functioning of the FCM framework for the uptake of SRM in practice. Next to the direct functioning of the FCM framework in practice, information regarding difficulties or unclarities was also structured in this element. In this research most attention has been given to this element as most bottlenecks are listed in this element. However, as the effects of the regulatory framework on the Practical State can occur in a certain sequence (primary, secondary, and tertiary effects), not all the information in the practical state is necessary a bottleneck. These had to be distilled in step 3 of the data analysis.

The element Impact focuses on the impact for the uptake of SRM in food packaging on actors in the value chain such as recyclers, converters, food packagers and importers. The identified and presented list of impacts is however again non-exhaustive as the impacts focused mainly on businesses in the value

chain. The impact on consumers and regulators have been mostly omitted as they were not the direct focus of this research.

For further limitations regarding the information in the PGRSI framework see also section 4.1.2 on data limitations above.

4.2.2.2 Results of the PGRSI framework

The results of the data analysis can be found in Annex 4 PGRSI Framework. A summary is given in Figure 9 below.

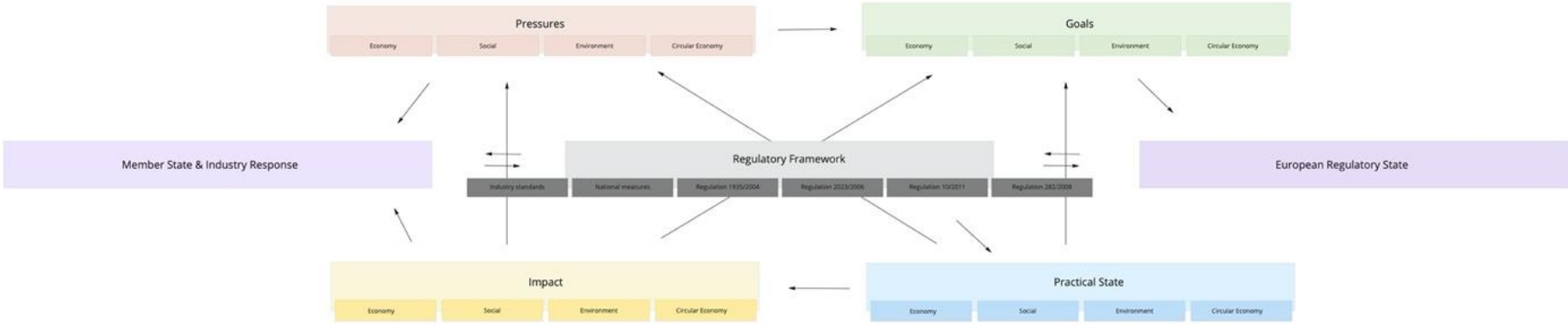

Figure 9 PGRSI framework for SRM in FCM

In Annex 4, first, the information from the public consultations (column F) was structured along the relevant PGRSI cycle (column A) and then along the relevant CE indicators (columns B and C). In some cases, multiple indicators applied. In such cases the most appropriate one was chosen (column B). However, when a CE indicator applied next to a main sustainable indicator, this was indicated separately (column C). To further structure and organize the information from the public consultation the "FCM regulatory framework" category was used in column E to distinguish between parts of the regulatory framework of FCM. In column G the source of the information has been indicated.

Again, the given PGRSI framework is non-exhaustive, as it is based on the information given in the consultations, the consulted literature and read against the indicators of the CE with the research purposes and constraints in mind.

4.2.3 Step 3: Identify and structure bottlenecks

In the third step, bottlenecks were distilled from the elements Practical State and the Regulatory Framework in the PGRSI framework.

4.2.3.1 Approach

First, the bottlenecks were identified from the elements Practical State and the Regulatory Framework in the PGRSI framework. The bottlenecks only resulted from these elements because the Regulatory Framework gives an overview of the regulatory framework in place and the Practical State reflects the performance of the current regulatory framework in practice. As the effects of bottlenecks can occur in a certain sequence, not all statements or information in the Practical state were identified as bottlenecks. Other main causes and main consequences of bottlenecks were furthermore mainly located in the regulatory state and the impact state. The identified bottlenecks were highlighted within the PGRSI framework (Annex 4, column F). Two colors were used. Red for direct bottlenecks and yellow for statements or bottlenecks that could indirectly be a bottleneck.

The identified bottlenecks were then further re-arranged and interpreted for the purpose of this research. A distinction was made between a general bottleneck regarding the uptake of SRM in food packaging and the related regulatory bottlenecks. This distinction and subsequent combination was needed because for most bottlenecks either the regulatory element or the relation to SRM in food packaging / FCM would otherwise not be clear.

4.2.3.2 Results

The identified bottlenecks in the PGRSI framework can be found in Annex 4 in the highlighted areas of column F. The list of subsequent distilled identified general and related regulatory bottlenecks can be found in Annex 5 Overview Regulatory Bottlenecks

5 Zoom in: In-depth analysis of regulatory bottlenecks within the current FCM Regulatory Framework

In this chapter the bottlenecks for the uptake of SRM in FCM/A are presented. This chapter is based on the BRIGHT phase 'Zoom in'. The chapter explains in the first section the relevant EU legal framework for the uptake of SRM in FCM in more depth. In section 2, the chapter presents the in-depth analysis of the identified bottlenecks.

5.1 Specific Regulatory Framework: possibilities to incorporate SRM in FCM

5.1.1 Approach

In this section the relevant regulatory framework for specifically the uptake of SRM in FCM is identified. This mapping is necessary to understand certain identified bottlenecks that are presented in the following sections of this thesis and to identify subsequent better regulation opportunities in chapter 6 & 7. This mapping of this regulatory framework is based on the results PGRSI framework as presented in section 4.2.2.2, specifically drawing from the elements Regulation and State.

5.1.2 Results

The current FCM regulatory framework offers several possibilities to incorporate SRM into plastic, paper and board food packaging.[30] The possibilities are based on the status the raw material has in the material lifecycle (virgin material, by-product, waste or end-of waste) the origin of 'waste' (post-industrial/pre-consumer[31], post-consumer[32]) sort of waste (food or non-food contact), the recovery process (mechanical, chemical) the place or layer where the SRM is

[31] See footnote 1

[32] There are no legal definitions for 'pre-consumer' and 'post-consumer' material in the EU legal framework. The Guidance on Waste Definitions describes the difference as "Pre-consumer material originates from the production of a product, post-consumer material originates from its use" (p.3) For packaging specifically pre-consumer material originates from converters, whereas post-consumer material is generated by end-users which can either be households or commercial, industrial, and institutional facilities. "Post-consumer material becomes waste if discarded after use." (P.24)

used (direct or indirect contact with food) and the material of the food packaging in which the SRM is used (plastics, paper or board).

Based on these criteria, the following possibilities for the uptake of SRM in FCM in the current regulatory framework are identified[33]:

1) Inclusion of offcuts and scraps from the production of plastic food contact materials;
2) Inclusion of by-products and recyclates in plastic (multi-layer) materials and articles;
3) Use of recyclates from authorizeed processes;
4) Use of by-products and recyclates in plastic materials and articles behind a functional barrier;
5) Inclusion of by-products and recyclates materials and articles in paper and board.

Notwithstanding, as already stated in chapter 2, all FCM/A must adhere to FCM. Framework Regulation 1935/2004 and the GMP Regulation 2023/2006. This means that FCM/A must be manufactured in accordance with good manufacturing practices and that FCM must secure the safety and quality of the final FCM/A. Furthermore, labelling and traceability requirements apply.

5.1.2.1 Inclusion of offcuts and scraps from the production of plastic FCM

Offcuts and scraps are rejected, or discarded material generated by a manufacturing process that is useful only after it is reprocessed. They are thus leftover materials from production. Offcuts and scraps can be included in the production of plastic FCM/A under the condition that

- The offcuts and scraps have not be used in contact with food or otherwise contaminated (Regulation 282/2008, Consideration 7);

[33] The identification of possibilities and subsequent requirement is limited to the scope of this research. This means that the possibilities are limited to paper, board and plastic, and the requirements are limited to the FCM framework.

- The offcuts and scraps are remelted on the premise into new product or sold to a third party as part of a quality control system (Regulation 282/2008, Consideration 7).

The reprocessing of plastic offcuts and scraps and the subsequent materials furthermore must follow the requirements of Plastic FCM Regulation 10/2011 next to the overarching Framework Regulation 1935/2004 and the GMP Regulation 2023/2006.

5.1.2.2 Inclusion of by-products in plastic (multi-layer) materials and articles

By-products are materials resulting from production that are not deliberately produced in the production process. They are thus excess or residual materials of the production process.[34] Examples are proteins from agricultural and food industrial sources to produce biofilms and -coatings (Santhosh et al., 2021; Uthpala et al., 2021) Substances and materials are considered by-product, and not a waste product, if four cumulative conditions are met according to article 5 of the WFD:

- Further use of the substance or object is certain;
- The substance or object can be used directly without any further processing other than normal industrial practice;
- The substance or object is produced as an integral part of a production process;
- The further use is lawful, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

[34] Offcuts and scraps are also considered byproducts by the Guidance on Waste (European Commission, 2021b). This thesis however decided to differentiate between by-products and offcuts and scraps as plastic offcuts and scraps are specifically mentioned in Regulation 282/2008, whereas by-products can be defined as a wider group of material that also includes non-plastic by-products from other production origins. Furthermore, UL (n.d.) also makes a distinction between scraps and by-products by differentiating that by-products possesses characteristics that make them ready for further use in the without any further processing, whereas scraps are only useful after being reprocessed.

In other cases, the material is either a product or waste. The differentiation between product, by-product and waste is further explained in the decision tree in Figure 10 below:

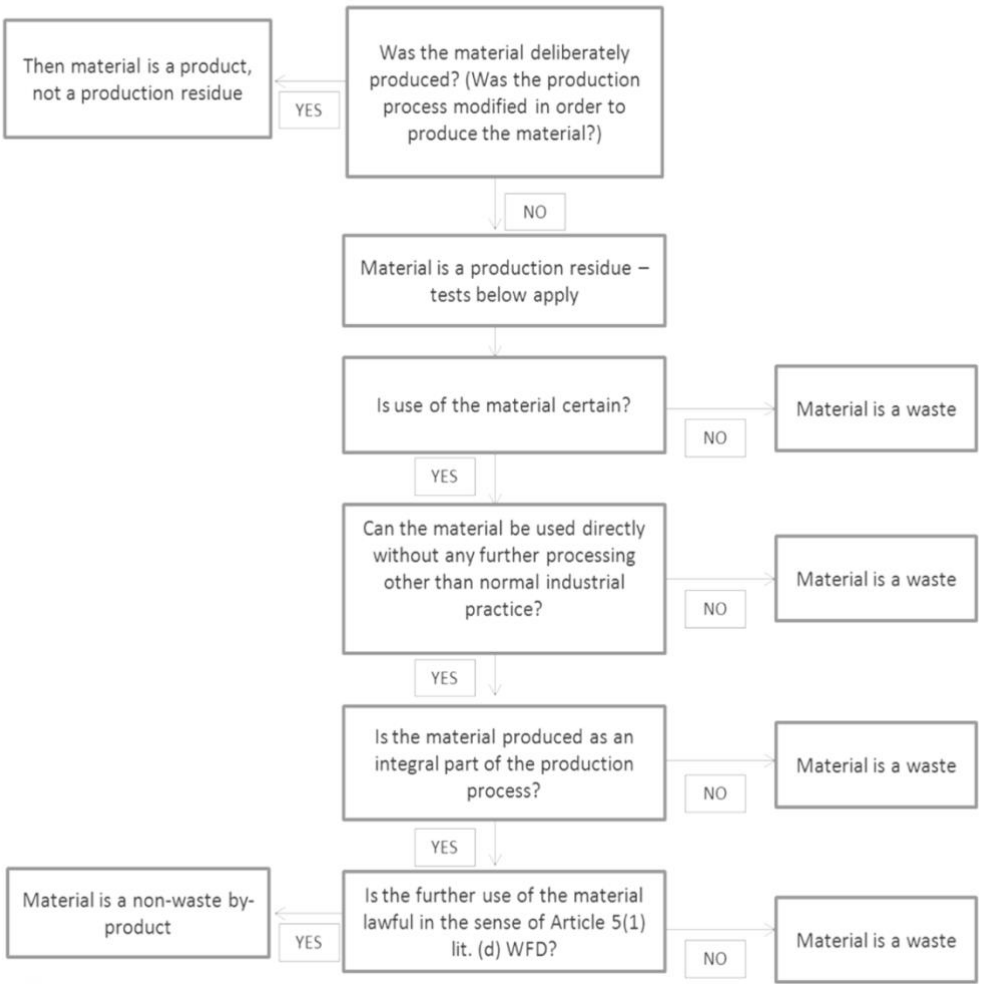

Figure 10 Decision tree for determining whether the material is a by-product (European Commission, 2021b)

By-products can be included in plastic FCM/A if they are listed in the Union list of authorized substances. Currently, over 900 substances are authorized and included in the Union list of authorized substances (Regulation 10/2011, Article 5 & Annex I Table 1)

The inclusion bio-based byproducts (e.g. peel, skin and seed extracts from plant sources) must follow the same rules as the conventional counterparts.

Furthermore, by-products and the subsequent plastic FCM/A must follow the requirements of Regulation 10/2011 next to the overarching Framework Regulation 1935/2004 and the GMP Regulation 2023/2006. Additional MS rules can apply as well

5.1.2.3 Use of recycled materials and articles from authorized process

Recycled materials and articles can be used in food packaging if the recyclate derives from an authorized process. The procedure for authorization is laid down in Regulation 282/2008 Article 4, 5 and 6. In short, recycling process must be safety assessed by the EFSA which gives an opinion whether the recycling process complies with the requirements laid down in the Regulation and whether additional conditions or restrictions on the recycling input, process, or output apply. Based on the opinion of EFSA the Commission can authorizes the recycling process.

To be authorized, a recycling process must meet certain conditions. Specifically, Article 4b imposes the condition that the input material for the recycling process must originate from plastic materials and articles that have been manufactured in accordance with the European FCM legislation. This means that that the input of the recycling process must be other FCM plastic material. Article 4c imposes the condition that contamination of the input material must be addressed. The regulation offers two possibilities: either the input material must originate from a product loop which is in a closed and controlled chain (4.c.i), or a recycler must demonstrate by means of a challenge test or other appropriate scientific evidence that the process is able to reduce the contamination the safe levels (4.c.ii).

To provide guidance on the authorization procedure EFSA published "Guidelines on submission of a dossier for safety evaluation by the EFSA of a recycling process to produce recycled plastics intended to be used for manufacture of materials and articles in contact with food" (EFSA, 2008).[35] This document provides guidance on the administrative and technical data that are required for the evaluation of the recycling process by EFSA. Furthermore, in 2011 EFSA/CEF

[35] The latest version was endorsed on September 9th 2020.

Panel published a scientific opinion describing the criteria used for the safety evaluation of a mechanical recycling process to produce recycled PET. To date, EFSA has evaluated over 180 processes (April, 2022). These processes cover different recycling processes (such as bottle-to-bottle and bottle-to-tray) as well as different materials *(PET, HDPE and PP).* The safety evaluation by EFSA can pose restrictions on the content of recycled material in the final FCM/A and/or on the application of the recyclates in FCM/A.

The use of the recycled articles and materials derived from an authorized recycling process is then subjected to the Plastic FCM Regulation 10/2011. This means that the recyclates must comply with the same requirements for other plastic materials and articles such as the positive list, OML's and SML's, traceability, declaration of compliance, next to the requirements from the overarching Framework Regulation 1935/2004 and the GMP Regulation 2023/2006.

5.1.2.4 Use of by-products and recycled materials in plastic FCM behind a functional barrier

Non-authorized materials can furthermore be used behind a functional barrier. A functional barrier is a (multi) layer within an FCM/A which prevents the migration of substances from behind that barrier into the food (Regulation 10/2011). It is thus an innerlayer in a material that is in contact with food and another layer. Non-authorized substances[36], such as non-authorized recyclates, may be used in plastic FCM behind a functional barrier. There are different possible functional barriers for recylates and by-products depending on the material properties

Based on Plastic FCM Regulation 10/2011 the functional barrier should either reduce the migration of authorized substances below the specific migration limit (SML) or reduce the migration of non-authorized substances into foods to a non-detectable level (0.01 mg/kg). The subsequent plastic materials must follow the requirements of Regulation 10/2011 next to the overarching Framework

[36] Mutagenic, carcinogenic, toxic to reproduction, nanoparticles substances are not covered by the functional barrier concept

Regulation 1935/2004 and the GMP Regulation 2023/2006 (Welle, 2016; Santisteve, 2018) .

5.1.2.5 Inclusion of by-products and use of recycled materials and articles in paper and board

Paper and Board are non-harmonized materials in the EU FCM-framework. This means that there are no further specifications or restrictions on the use of by-products and use of recycled materials and articles in paper and board. However, the use of these SRM may be subjected to additional MS rules as Article 5 of 1935/2004 also allows for additional rules on "recycled materials and articles" "and combination of materials and articles." Next to Framework Regulation 1935/2004 the GMP Regulation 2023/2006 applies.

5.2 In-depth analysis of identified regulatory bottlenecks

In this section the bottlenecks from the first phase 'Collect input' are studied into more depth against the mapped regulatory framework from the section 5.1 above.

5.2.1 Approach

After the identification, selection and evaluation, the bottlenecks were studied in more depth based on the available information. The data of the public consultation was herefore, as already introduced in section 4.1, supplemented by other sources such as research articles, and documents indicated in the consultation, government publications, stakeholder reports and other (grey) literature. These sources were used to compare or complement information. The information was then used to explain the issue in more depth and evaluate the relevance of the bottleneck. Where possible a causal relationship was between the bottleneck and a driver or consequence was established. In cases this was not directly possible a driver as identified in the element Pressure or Goal from the PGRSI framework and consequence as identified in the element State or Impact was assumed.

5.2.2 Results

The results of the in-depth analysis of the bottlenecks can be found in Annex 5 Overview Regulatory Bottlenecks Specifically, in column B the distilled general

bottleneck for the uptake of SRM in FCM/A is stated and in Column D the related regulatory bottleneck to that general bottleneck is stated. The bottleneck is then further explained in detail in column J. The regulatory drivers to the bottleneck are stated in column G, H & I In column H, the specific related legislation and articles are stated, which literal text is then stated in column I. The identified consequence is given in column L.

5.3 Data classification: Classification of selected Bottlenecks

5.3.1 Approach

Based on the in-depth analysis the resulting bottlenecks were classified according to the BRIGHT classification as introduced in section 3.2.2.2 and extended in section 3.2.4. This classification was done to see if the bottlenecks also hold better regulation opportunities. The categorisation was based on three criteria:

- The coherence of the problem definition;
- The placement of the bottleneck within the regulatory framework;
- The overall EU relevance.

Some bottlenecks eventually could be classified in multiple categories, whereas other could not be classified, for example because there was enough information available to determine and categorise them as better regulation bottleneck.

5.3.2 Results

The final list of bottlenecks can be found in the Table 13 below. In this table the identified bottlenecks are presented per Better Regulation Category: Legal Technicality Issue, Legal Objective Issue, and Legal Clarification Issue. Subsequently the identified bottlenecks were also further classified per Better Regulation subcategory Efficiency Issue, Effectiveness Issue, Interconnection Issue, Legislative Purpose issue, Issue due to Lack of Necessary Rules, Lack of Interpretation and Lack of Guidance.

Types of legislative bottlenecks			
GB #	*General bottleneck*	*RB #*	*Regulatory Bottleneck*
Legal technicality issues			
Efficiency Legislation			
A	The current framework does not make formally a distinction between primary and secondary raw material.	1	There is no legal distinction between virgin and recycled material for the manufacturing of FCM
		2	There are no general requirements for recycled plastic articles or materials.
B	The declaration of compliance as it is currently designed is not sufficient and / or does not contain all the necessary information	3	The DoC does not contain sufficient information
		4	Doc is not standardized for all FCM
C	The conditions and requirements for different recycled plastics materials and articles are limited or not sufficiently clear	5	The definition of 'plastic input' in Regulation 282/2008 limits the input into the recycling to decontamination of post-consumer waste.
D	The EFSA guidelines and criteria for the safety evaluation of plastics recycling process are not sufficient (for all recycled plastics, plastics recycling processes and practices, recycled plastic uses) and is not sufficiently reflective of current scientific knowledge.	6	EFSA has (only) published evaluation criteria for the safety assessment of PET
E	The challenge test as it is currently designed is not appropriate for all recycled plastics or recycling processes and sufficiently reflective of current scientific knowledge.	7	EFSA applies Article 4.c.ii rather strict and requires a challenge test
		8	There is no appropriate challenge test for polyolefins (PP&PE)
F	The criteria for input characteristics are challenging to be met	9	EFSA applies Article 4.c rather strict and requires full traceability and 95-99% sorting efficiency.
		10	Collected waste can contain plastics that was not manufactured according to EU FCM regulations or has been have subjected to limits or specifications
		11	The legally non-binding EFSA recommendation from 2011 that 5% non-food contact material is allowed in the input complicates the use post-consumer recyclates (PCR) from mixed collections in food contact

G	The (legal) possibilities, conditions and requirements) of SRM for FCM are (legally) limited or not sufficiently clear	12	Some recycled plastics outside of the scope of 282/2008 have to declare their content as 100% virgin.
H	The requirements to declare recycled content and label recycled materials are insufficiently clear.	13	There is no coherent labelling scheme or usage information that facilitate the proper intended use of FCM by consumers.
Effectiveness Legislation			
I	The conditions and requirements for recycled plastics deriving from chemical recycling (and hybrid recycling) processes are not sufficiently clear	14	The scope of Regulation 282/2008 excludes recycled plastic materials and articles made with monomers and starting substances, derived from chemical depolymerization of plastic materials and articles
J	The conditions and requirements for the uptake of different recycled plastics materials and articles (HDPE, LDPE PP, PET) in different use scenarios are not sufficiently clear	15	There are no existing EFSA approvals on the suitability of recycled content of LDPE / HDPE for use in beverage cartons
		16	Important plastic materials and substances are missing in the in the EFSA assessed recycling processes
		17	Existing EFSA have not evaluated the use of the recycled PET in microwave or hot ovens.
E	The challenge test as it is currently designed is not appropriate for all recycled plastics or recycling processes and sufficiently reflective of current scientific knowledge.	18	The design of current safety evaluation such as the calculation methods, migration values, assumptions and are based on overestimated data and safety factors, conservative assumptions (conservative, unrealistic, and worst-caste exposure and contamination scenario's and exaggerated conditions).
		19	The criteria that EFSA uses for the safety evaluation of a mechanical recycling process to produce recycled PET are based on outdated information (PET bottle data from 1997-2001).
		20	The criteria that EFSA uses for the risk assessment are based on data generated from analysis of PET bottles and based on bottle and drinker water risk assessment.
K	There is limited availability of quality SRM that are legally allowed for FCM/A and businesses can use	21	There is a lack of formal authorization of any plastic recycling process.
G	The (legal) possibilities, conditions and requirements) of SRM for FCM are (legally) limited or not sufficiently clear	22	Provision 3,9,10 & 12 of 282/2008 are not in force
		23	Some recycled plastics outside of the scope of 282/2008 have to declare their content as 100% virgin.
Interconnection			

C	The conditions and requirements for different recycled plastics materials and articles are limited or not sufficiently clear	24	Strictly and formalistically speaking, a PCR substance does not fall under the definition of NIAS
Legal objective issues			
Legislative purpose			
A	The current framework does not make formally a distinction between primary and secondary raw material.	25	There are no general requirements for recycled articles or materials.
D	The EFSA guidelines and criteria for the safety evaluation of plastics recycling process are not sufficient (for all recycled plastics, plastics recycling processes and practices, recycled plastic uses) and is not sufficiently reflective of current scientific knowledge.	26	EFSA has (only) published submission guidelines for the safety assessment and safety criteria for the evaluation of mechanically recycled plastic for direct food contact applications.
E	The challenge test as it is currently designed is not appropriate for all recycled plastics or recycling processes and sufficiently reflective of current scientific knowledge.	27	The design of current safety evaluation such as the calculation methods, migration values, exposure scenarios, concentration of potential genotoxic compounds, diffusion potential ad other assumptions and are based on overestimated data and safety factors, conservative assumptions (conservative, unrealistic, and worst-caste exposure and contamination scenario's and exaggerated conditions).
Lack of Necessary Rules			
L	The conditions and requirements for materials and substance deriving from bio-based sources are not sufficiently clear	28	There is no specific legislation in place applying to bio-based plastics that could be used in the manufacturing of plastics or paper FCM/A.
C	The conditions and requirements for different recycled plastics materials and articles are limited or not sufficiently clear	29	The scope of 282/2008 excludes certain recycling practices and certain uses of recycled Plastic
I	The conditions and requirements for recycled plastics deriving from chemical recycling (and hybrid recycling) processes are not sufficiently clear	30	Chemical recycling and products deriving from it are currently not sufficiently addressed in the FCM framework
	The conditions and requirements for recycled plastics deriving from future and	31	Future and innovative recycling processes are not sufficiently addressed in the FCM framework

M	innovative processes are not sufficiently clear		
N	The authorization for recycling processes is long and burdensome.	32	There are no clearly defined timelines, timeframes or deadlines for the European Commission's decision-making on the suitability of a recycling technology (granting or refusing authorization of the recycling processes) or the establishment of the register
G	The (legal) possibilities, conditions and requirements) of SRM for FCM are (legally) limited or not sufficiently clear	33	There is no harmonized assessment procedure for recycled plastics
		34	The scope of Regulation 282/2008 is limited to only post-consumer polymers in direct contact with food
		35	There is no overall harmonized or positive list for substances that can be used in the manufacturing of FCM/A
O	There are no regulatory requirements or regulatory guidance for the recycling of non-harmonized materials such as paper, board	36	There are no regulatory requirements or regulatory guidance for the recycling of non-harmonized materials such as paper & board
P	There are no or not sufficient incentives for using recycled materials	37	There are no targets for the uptake of SRM in FCM other than PET bottles
Legal clarification issues			
Lack of interpretation			
A	The current framework does not make formally a distinction between primary and secondary raw material.	38	The definition of 'recycled (plastic) material and article' is not sufficiently clear.
Q	There is unclarity when a SRM is allowed to be used for FCM/A in terms of the material life cycle	39	The product status of offcuts and scraps is not sufficiently clear
		40	It is unclear when and whether printed materials can be considered offcuts and scraps.
I	The conditions and requirements for recycled plastics deriving from chemical recycling (and hybrid recycling) processes are not sufficiently clear	41	The scope of Regulation 10/2011 is not sufficiently clear regarding chemical recycling
M	The conditions and requirements for recycled plastics deriving from future and innovative processes are not sufficiently clear	42	Future and innovative recycling processes are not sufficiently addressed in the FCM framework

F	The criteria for input characteristics are challenging to be met	43	It is unclear where the obligation of traceability starts for recyclers
H	The requirements to declare recycled content and label recycled materials are insufficiently clear.	44	Labelling requirements for recycled plastic materials and articles used behind a functional barrier or in multilayer material are unclear.
R	The current framework and its interconnections with other frameworks is complex and hard to understand	45	It is unclear if exempted recycling processes area able to contribute to recycling quotas and targets for recycled content.
		46	There are no harmonized EoW criteria for Plastics
Lack of guidance			
D	The EFSA guidelines and criteria for the safety evaluation of plastics recycling process are not sufficient (for all recycled plastics, plastics recycling processes and practices, recycled plastic uses) and is not sufficiently reflective of current scientific knowledge.	47	There is limited guidance for non-PET recycling practices as these polymers are not covered by the EFSA scientific opinions
		48	There is limited guidance on the authorization of recycling HDPE in a EU and non bottle-to-tray scenario's.
F	The criteria for input characteristics are challenging to be met	49	There is no traceability guideline for recycled plastics FCM
		50	There is insufficient guidance how to comply with the input characteristics
		51	It is unclear how to count the allowed non-food food contact materials in input for recycling.
R	The current framework and its interconnections with other frameworks is complex and hard to understand	45	It is unclear if exempted recycling processes area able to contribute to recycling quotas and targets for recycled content.
		46	There are no harmonized EoW criteria for Plastics

Table 13 Identified Bottlenecks for the uptake of SRM in food packaging in the FCM-Regulatory Framework based on the adapted BRIGHT method and classified per Regulation & Legislation Issue category

6 Matching: Match Bottleneck with Better Regulation Opportunities

In this chapter the classified bottlenecks are linked to the Better Regulation Agenda of the European Commission to identify better regulation opportunities to address the bottlenecks. This chapter is based on the BRIGHT phase 'Matching'. This chapter will first provide an overview of the opportunities in the review of the FCM-Framework. Then it will touch upon the opportunities in the review of the other relevant legal frameworks for food packaging. In the last section of this chapter the bottlenecks as presented in section 5.3.2, are matched with the identified better regulation opportunities that are identified in section 1 and 2 of this chapter.

6.1 Opportunities in the FCM Framework review

There are several better regulation opportunities to address the bottlenecks that are located in the FCM framework. This is because the FCM framework is currently (July, 2022) in the formulation phase.

6.1.1 Overview of the action taken and planned during the FCM framework review

The FCM framework is since 2012 subjected to review. An overview of the planned and taken better regulation actions are given in Table 14. The table follows the structure of the four continuous phases of the cyclical steps of EU-policy making cycle according to Better Regulation.

Evaluation	2012: Roadmap 'Food Contact materials – Specific provisions for products other than plastics- implementing measure' 2016: DG EPRS Implementation Assessment Study 2016: European Parliament resolution on the implementation of the FCM regulation 2017: Publication JRC Baseline study 2017: Roadmap Food Contact Materials 2018: FCM Evaluation workshop 2019: Consultation FCM framework
	?: Review 16th amendment 10/2011
Prepare for formulation	2019: Green Deal 2020: Farm to Fork 2020: Chemical strategy for sustainability
Formulation	Q1 2019: Planned 1st amendment Regulation 282/2008
	2020: Consultation Inception Impact Assessment
	Q3 2021: Planned 1st amendment Regulation 282/2008
	Q4 2021: Publication review Regulation 282/2008
	Q4 2021: Planned publication of Register of authorization holders, recyclers and recycling sites
	Q1 2022: Planned Publication draft FCM
	Q3 2022: Public Consultation FCM Framework
	Q2 2023: Proposal FCM framework
	> 2021 Planned 2nd amendment Regulation 288/2008
	?: Planned Public Consultation to 16th amendment 10/2011
Adoption	Q1 2022: Planned adoption Review Regulation 282/2008 Q2 2023: Planned adoption new FCM framework
Implementation	> 2025: Planned implementation new FCM framework

Table 14 Overview Timeline FCM Review (July, 2022)

(Legenda: green: taken place, yellow: planned and must take place, red: planned but has not taken place)

In November 2017 the European Commission published a roadmap to review the FCM framework. This roadmap summarized the basic problems that were related to the regulation of FCM and its working, why these problems exist, the upcoming policy objectives and the anticipated results.

Following, the European Commission launched in 2019 a public consultation for the FCM review. The goal was to assess whether the current framework accomplishes its intended purpose and to identify issues with the current legislation. The public consultation included two questionnaires: one for consumers and one for stakeholders. The more extensive questionnaire for stakeholders included questions about the effectiveness of the current legislation and current gaps or inconsistencies in the legislation. The contributions to this public consultation have been used as data input for this research.

In December 2020 opened a consultation on its Inception Impact Assessment for the ongoing evaluation and revision of the FCM framework. The assessment considered the feedback the EC had collected up to that point, but also put the FCM review in line with the CE and green deal policy goals.

In December 2021 the Commission proposed a draft for a review of the Regulation 282/2008 on Recycled Plastic Materials was published. This draft was not completely unforeseen (Standing Committee on Plants, Animals, Food and Feed, 2021a, 2021b) but initially two amendments to Regulation 282/2008 were expected (Callaert, 2021). In January 2021 it was communicated by the Commission that in the third quarter of 2021 an amendment to Regulation 282/2008 would be published, entailing a transition period for nationally regulated recycled plastics currently on the market (Briggs, 2021). This amendment would enable the Commission authorization of recycling processes in the fourth quarter of 2021. Furthermore, this first amendment would clarify certain definitions and requirements,[37] and include general requirements for the production of recycled plastics and a changed DoC. In a future not planned second amendment to Regulation 282/2008 the scope of Regulation 282/2008 would be broadened so it would entail more recycled materials and processes (Callaert, 2021). In April 2021 the Commission however communicated it was working on a review of Regulation 282/2008 which would update some definitions and make requirements less complex. This review of Regulation 282/2008 was eventually published in the fourth quarter of 2021.

Also, a review of Regulation 10/2011 was communicated. This 16th amendment was scheduled to be finalized in 2021, but has been delayed as well (Semail, 2022; Standing Committee on Plants, Animals, Food and Feed, 2022). In this amendment unclarities regarding offcuts and scraps would be addressed, for example which offcuts and scraps are not allowed to be used. Furthermore it would introduce a template for DoCs, and re-regulate wood flour and fibre, and regulate corn and bamboo flour in plastic FCMs (Boucher, 2020).

[37] Requirement for authorization holders, (modification of) process and installations.

The timeline for proposing a new FCM framework legislation has been extended several times. The FCM legislation was originally announced to be completed by 2019. Currently (July, 2022) a new FCM framework is planned to be announced in the second quarter of 2023.

6.1.2 Preliminary Results of the FCM evaluation

In the Inception Impact Assessment, the European Commission identified several issues within the overall FCM framework. The issues were identified among others from the public consultation to the FCM evaluation. The eight fundamental issues are:

1. Lack of functioning of the internal market and possible safety issues for non-plastics FCMs
2. The positive authorised list approach and lack of focus on the final article
3. Lack of prioritisation of the most hazardous substances and up-to-date assessments
4. Exchange of safety and compliance information in the supply chain is poor and the ability to ensure compliance is compromised
5. Enforcement of rules on FCMs is generally poor
6. Rules do not sufficiently take into account the specificity of SMEs
7. Rules do not encourage development of safer and more sustainable alternatives
8. The subject matter is not always clear and definitions need to be reviewed

6.1.3 Indicated measures in the future FCM framework

The Commission has indicated several measures regarding the revision of the FCM framework in the Green Deal communications and in the Inception Impact Assessment of the FCM framework.

In May 2020, the Farm to Fork strategy stated that the Commission will revise the FCM legislation to improve food safety and support the use of re-usable and recyclable materials. Furthermore, in the Chemical Strategy for Sustainability the Commission stated it will reinforce provisions to consider combination effects of FCM.

Policy	Publication Date	Planned action	Indicative time when published
Farm to Fork Strategy	20th of May 2020	Proposal for a revision of EU legislation on Food Contact Materials to improve food safety, ensure citizens' health and reduce the environmental footprint of the sector	Q4 2022
Chemicals Strategy for Sustainability	14th of October 2020	Introduce or reinforce provisions to take account of the combination effects of chemicals in water, food contact materials, food additives, toys, detergents, cosmetics	2022

Table 15 Overview of Planned Actions related to the Review of the FCM framework in the Green Deal Strategies

Specifically, In the Inception Impact Assessment the Commission communicated how to address the identified issues. The Commission intends to ensure the safety and sustainability of the final FCM and ensure exchange of information in the supply chain, support for SMEs and enforcement of the rules. Therefore, it considered to tackle the issues with the following measures:

A. Shifting the focus onto final materials
B. Prioritising the assessment and management of substances
C. Supporting safer and more sustainable alternatives
D. Improving quality and accessibility of supply chain information for compliance and enforcement
E. System for ensuring compliance of the final FCM

In the Impact Assessment the Commission furthermore offered three policy options for the review FCM:

1. Using the current regulatory framework;
2. Develop a new regulatory framework;
3. Or a combination of 1 and 2.

6.2 Opportunties in other relevant Regulatory Frameworks

As the identified bottlenecks also touch upon the regulatory frameworks for waste and chemicals an overview of the status of these regulatory frameworks is given in this section. Also, as the Commission has published an initiative for a policy framework on biobased, biodegradable, and compostable plastics, possibilities within this framework is included in the section as well.

6.2.1 Opportunities in the Framework for Waste

The waste framework holds several better regulation opportunities because the WFD is currently (July, 2022) in the formulation phase. An overview of the planned and taken better regulation actions are given in

Table **16**.

Adoption & Implementation	Directive 2018/852 amendment to Directive 94/62
Evaluation	2014: Fitness Check Directive 94/62
Prepare for formulation	2019: Plastic Strategy 2019: Green Deal 2020: New circular economy action plan
Formulation	2020: Inception Impact Assessment
	2020-2021 Public Consultation
	Q1 2022: Planned proposal for a directive
Adoption	Not planned
Implementation	Not planned

Table 16 Overview taken and planned Better Regulation action for the Packaging and Packaging Waste Directives (July, 2022) (Legenda: green: taken place, yellow: planned and must take place, red: planned but has not taken place)

Several actions that are communicated in the new Circular Action Plan that are related to FCM/A will probably be addressed in the waste framework review, considering these topics are currently regulated under this framework. One action communicated in the New Circular Action Plan that has not been identified before in Table 8 Overview of planned actions on the better regulation of the FCM-framework in the Green Deal strategies, is the development of further EU-wide end-of-waste and by-product criteria. This action will probably also be

addressed in the waste framework review. An overview of planned actions relate to the waste framework is given in Table 17 below.

Communication	Publication Date	Planned action	Indicative time when published
A new Circular Economy Action Plan	11th of March 2020	Initiative to substitute single-use packaging, tableware and cutlery by reusable products in food services	2021
		Scoping the development of further EU-wide end-of-waste and by-product criteria	2021
		Policy framework for bio-based plastics and biodegradable or compostable plastics	2021
		Harmonised information systems for the presence of substances of concern	2021
		Mandatory requirements on recycled plastic content and plastic waste reduction measures for key products such as packaging, construction materials and vehicles	2021/2022

Table 17 Overview of Planned Actions related to the Bottlenecks in the New Economy Action Plan

6.2.2 Opportunities in the Framework for Chemicals

The chemical framework holds several better regulation opportunities because the REACH directive is currently (July, 2022) in the formulation phase. An overview of the planned and taken better regulation actions are given in Table 18 below.

Evaluation	2018: REACH Review 2021: Consultation Roadmap REACH
Prepare for formulation	2019: Plastic Strategy 2019: Green Deal 2020: Chemical strategy for sustainability 2020: New circular economy action plan
Formulation	2022 Public Consultation
Adoption	Q4 2022: Planned Adoption proposal for a regulation
Implementation	Not planned

Table 18 Overview taken and planned Better Regulation actions for REACH (July, 2022) (Legenda: green: taken place, yellow: planned and must take place, red: planned but has not taken place)

Several actions that are communicated in the new Chemicals Strategy for Sustainability Towards a Toxic-Free Environment that are related to FCM/A will probably be addressed in the Chemical Framework review, considering these topics are currently regulated under this framework.

Policy	**Publication Date**	**Planned action**	**Indicative time when published**
Chemicals Strategy for Sustainability Towards a Toxic-Free Environment	14th of October 2020	Develop EU safe and sustainable-by-design criteria for chemicals	2022
		Proposals to extend the generic approach to risk management to ensure that consumer products do not contain chemicals that cause cancers, gene mutations, affect the reproductive or the endocrine system, or are persistent and bioaccumulative and toxic; assess the modalities and timing to extend the same approach to further chemicals including those affecting the immune, neurological or respiratory systems and chemicals toxic to a specific organ (REACH Article 68(2)	2022
		Update information requirements to allow the identification of endocrine disruptors in relevant legislation, particularly under REACH, legislation on cosmetic products, food contact materials, plant protection products and biocidal product	2022
		Proposal to amend the CLP Regulation to CLP Regulation 2021 3 introduce new hazard classes on endocrine disruptors, PBTs/vPvBs and persistent and mobile substances, and apply them across all legislation	2022
		Proposal to amend REACH Article 57 to add endocrine disruptors, persistent, mobile and toxic (PMT) and very persistent and very mobile (vPvM) substances to the list of substances of very high concern	2022
		Proposal to revise the REACH authorisation and restriction processes	2022

		Proposals to revise requirements for registration in REACH to ensure: the identification of substances with critical hazard properties, including effects on the nervous and immune systems, the move towards grouping approaches, the registration of a sub-set of polymers, information on the overall environmental footprint of chemicals, the obligation of chemical safety reports for substances between 1-10 tonnes	2022

Table 19 Overview of Planned Actions communicated in the Green Deal that are related to the chemicals framework

6.2.3 Opportunities in the Biobased, biodegradable and compostable plastics Policy framework

Lastly, there are opportunities in the bio-based, biodegradable and compostable plastic policy framework. This framework is new and announced in the plastic strategy and the Green Deal. It is currently (July, 2022) in the evaluation phase. An overview of the planned and taken better regulation actions taken are given in Table 20.

Evaluation	2021: Consultation Roadmap
Prepare for formulation	2019: Plastic Strategy 2019: Green Deal 2020: New circular economy action plan
	Q2 2022: Planned commission adoption for a communication on a Policy Framework on biobased, biodegradable and compostable plastics
Formulation	Not planned
Adoption	Not planned
Implementation	Not planned

Table 20 Overview planned and taken Better Regulation actions fo bio-based, biodegradable and compostable plastic policy framework (May, 2022) (Legenda: green: taken place, yellow: still has to take place, red: not taken place)

Communication	**Publication Date**	**Planned action**	**Indicative time when published**

Roadmap Policy Framework on biobased (BBP), biodegradable and compostable plastics (BDCP)	29th of September 2021	establishing clear definitions and overarching principles applying to both BBP and BDCP in light of the circular economy and waste hierarchy principles as well as relevant national experience in this field; follow-up actions will also be considered where appropriate;	n.a.
		for BBP, clarifying the measurement method and labelling of the part of a plastic product that is entirely or partly derived from biomass (the 'biobased' content) as well as the sustainability of the biological feedstock used to produce BBP by considering sustainability criteria	n.a.
		for BDCP, clarifying definitions, applications and criteria for such applications, as well as the role of testing, labelling and certification to ensure effective biodegradation, alignment with actual disposal infrastructure, and avoid consumer confusion	n.a.

Table 21 Overview of Planned Actions communicated in the roadmap Roadmap of the Policy Framework on biobased (BBP), biodegradable and compostable plastics (BDCP) that are related to this research

6.3 Matching the bottlenecks with better regulation opportunities

In this section the analyzed bottlenecks are matched with the better regulation opportunities. The main opportunities to address the bottlenecks for the uptake of SRM in food packaging are located in the FCM regulatory framework and its application, and in the waste framework. The resulting opportunities are listed in Table 22 below per bottleneck. For the numbers of the bottlenecks see Table 13. For additional clarity the table also follows the four continuous phases of the better regulation policy cycle.

Evaluation & Formulation	Address all bottlenecks in the Fit for the Future platform and available stakeholder consultations Address bottleneck (28) during Feedback Period[38] to the communication on a Policy Framework on biobased, biodegradable and compostable plastics Address bottlenecks (C, I, J, G, H, L, M, 10, 11,14, 23, 24, 28, 29,30, 32, 33 39, 40, 41,44,45) during planned review or public consultation for amendment Regulation 10/2011 Address bottleneck (C, D, E, F,G, H, I, J, K, M,N, 1, 5, 6, 7,8, 9, 10, 11 14,15, 16, 17, 18 ,19, 20, 21, 22, 23, 24,25, 26, 27,29,31,33, 34, 38,39, 40, 42, 43, 44,45, 47, 48, 49,50, 51) during possible Impact Assessment of Regulation 282/2008[39]. Address bottlenecks (A, B, C, D, E, F, G, H, I, J K, L, M, N, O, P, Q ,R 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23,24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39,40, 41, 42, 43, 44, 45, 47, 48, 49 50, 51) during public consultation for the FCM-framework
Adoption	Address bottleneck (A, G, H, K, Q, P, R 2, 10, 25, 37, 38, 45, 46) during the Feedback period to the Planned proposal for a revision of the Packaging and Packaging Waste directive Address bottlenecks (A, G, K, Q, R, 2, 25, 35, 38,46) during the Feedback period to the Planned proposal for a revision of REACH regulation
Implementation	Address all bottlenecks in the Fit for the Future platform Address bottleneck (C,D, E, F, J, N, 6,7, 8, 9, 15, 16, 17, 18, 19, 20, 26, 27, 43, 47, 48, 49, 50, 51) by engaging in EFSA stakeholder engagement mechanisms
Unmatched	Bottlenecks highlighted in grey in Annex 5 column B & D due to lack of information.

Table 22 Better Regulation Opportunities to address bottlenecks (July, 2022) [40]

As specifically the regulatory framework for the FCM-framework is still in the formulation phase, most identified bottlenecks (A, B, C, D, E, F, G, H, I, J K, L, M, N, O, P, Q ,R, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20,

[38] In the BRIGHT roadmap the term Feedback is not used. Instead, this moment is called a public consultation. This differs from the European Commissions' toolbox where a distinction is made between feedback and consultation. A feedback moment offers an opportunity for stakeholders to express general views on a specific document whereas a consultation is a formal process for collecting input and views from stakeholders on new initiatives evaluations/fitness checks, communications, Commission documents launching a consultation process, green paper etc. (European Commission, 2021c; p.439) However, for the FCM framework the Commission specifically announced a public consultation as one of the consultations activates. As it is not clear if this Public Consultation for the FCM framework will be accompanied by an Impact Assessment or if it is part of the consultation activities attached to the Impact Assessment Process, this table decided for clarity to distinguishes between feedback for Public Consultation that are related to the publication of proposals and initiatives and Public Consultation as a consultation activity. Feedback in this table is thus not the same as feedback according to the Better Regulation toolbox.

[39] This impact assessment is not announced by the European Commission, but might be realistic considering the critique that was given to the Review of Regulation 282/2008.

21, 22, 23,24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51) can be addressed in this upcoming revision as it possibly addressed the whole regulatory framework and not just Regulation 1935/2004. For the bottlenecks C, D, E, F,G, H, I, J, K, M, N, 1, 5, 6, 7,8, 9, 10, 11, 14, 15, 16, 17, 18 ,19, 20, 21, 22, 23, 24,25, 26, 27, 29 ,31, 33, 34, 38, 39, 40, 42, 43, 44, 45, 47, 48, 49, 50, 51 that are specifically located in Regulation 282/2008, addressing might be difficult as a draft for a review has been published and is planned to be adopted in the beginning of 2022. The bottlenecks can then only be addressed at the feedback to the official proposal and subsequent at EU institutions during the legislative process of this proposal for the review of Regulation 282/2008. In case there is no Impact Assessment for Regulation 282/2008 anymore, these bottlenecks then have to be addressed during that feedback period.

For addressing the bottlenecks in the waste framework (bottleneck A, G, H,K,Q, P, R 2, 10, 25, 37, 45, 46) the direct opportunities are more limited. Despite the waste framework being in the formulation phase, there is no specific feedback period in the formulation phase announced anymore. The first possibility is during the feedback to the planned proposal for a revision of the PPWD in the adoption phase. The same holds for the bottlenecks that are located in the REACH regulation A, G, K, Q, R,2, 25, 35,46 as the first open better regulation opportunity would be the Planned proposal for a revision. However, as these bottleneck are also related to FCM/A, these bottlenecks can nevertheless be addressed in the public consultation to the FCM regulatory framework.

Furthermore, bottleneck 28 can be addressed during the feedback to the Planned commission adoption for a communication on a Policy Framework on biobased, biodegradable and compostable plastics.

Lastly, the bottlenecks (A, G, K, Q, R, 2, 25, 35, 38, 46) that are located in the application of the FCM regulatory framework, hold additional better regulation opportunities in the form of Better Governance and Better Application. Because these bottlenecks are located specifically in the application and functioning of current procedures, these bottlenecks would gain from drafting additional interpretation and guidance documents and do not necessarily rely on the

revision of legislation. According to theory, these bottlenecks can be addressed in the F4F platform through the 'Have your say' portal as The F4F platform helps to identify bottlenecks stemming from the implementation of EU legislation (European Commission, 2021c: p, 12). Specifically, these bottlenecks are not in legislation that is part of legislative procedure, not part of legislation implemented for less than two years, not an issue of national responsibility and not subject to a consultation of the social partners.[41] However, as the F4F only gathers evidence on the topics identified in the annual work program (European Commission, 2021c: p, 452) and the 2022 annual work program (Fit for Future, 2022) is focusing on eleven topics of which the REACH legislation is the only FCM/a related topic, these specific bottlenecks will not be considered by the Platform this year. Addressing these bottlenecks in the F4F Platform anyway is possible and might result in that the topic will be considered in the next annual work program. However, as the FCM review is still ongoing, this is probably inconceivable. Addressing these bottlenecks beyond the FCM public consultation might thus require a different strategy that is beyond the better regulation roadmap of BRIGHT, such as engagement with Stakeholder consultation activities that are part of the impact assessment process[42], EFSA stakeholder platforms[43] and European Institutions during the legislative procedure.[44]

[41] See footnote 22.

[42] BRIGHT only mentions the existence of these consultation activities but does not provide additional information to identify opportunities.

[43] EFSA has several stakeholder engagement tools. An overview of these are listed in the following document: efsa.europa.eu/sites/default/files/engage/stakeholders/catalogue-sh-engagement-mechanisms.pdf. A more in-depth study of these tools and input opportunity moments accordingly is beyond the scope of this thesis.

[44] Engagement with European Institutions during the legislative procedure would classify more as a lobbying and might thus requires a different strategy.

7 Propose: Better Regulation Possibilities

In this chapter the possibilities to better regulate the uptake of SRM into food packaging material in the upcoming review of the FCM-Framework are presented. This chapter is based on the BRIGHT phase 'propose'.

This chapter builds on the bottlenecks as identified in the 'Zoom in' phase, and the input opportunities identified in the 'Matching' phase. Specifically, this chapter proposes which topics could or should be addressed in the review of the FCM regulatory framework in general and in Plastic FCM Regulation 10/2011 and Regulation 282/2008 specifically. To explain why this topic should be addressed, it either links the identified bottlenecks from chapter 5 or gives additional information. Lastly, it gives an indication of the better regulation approach to address the bottleneck (see section **Error! Reference source not found.**).

While other bottlenecks and other input opportunity moments were identified in chapter 5 & 6, this chapter only considers bottlenecks with input opportunity moments in the FCM regulatory framework. In the previous chapter two specific moments regarding the FCM framework were identified: the Feedback period to the Proposal for FCM framework and the possible Impact Assessment of Regulation 282/2008.[45] This proceedings chapter therefore follows this distinction.

Furthermore, as multiple bottlenecks were specifically located in the application of Regulation 282/2008, an overview of opportunities for better regulation in the form of better governance of the FCM regulatory framework are given as well. In section 6.3 the addressing these bottlenecks was limited to the identification of EFSA stakeholder engagement mechanisms and additional stakeholder consultation activities. This chapter therefore follows that distinction as well. The better governance opportunities can however additionally be addressed in the FCM-Public Consultation.

[45] In the case the Impact Assessment of Regulation 282/2008 does not take place, the opportunities stated for the Regulation 282/2008 can also be raised during the Proposal for the FCM framework.

As providing specific recommendations regarding the legislative act is beyond the scope of this research[46], the proposing part of this chapter is limited to identifying which topics could be addressed or should be considered in the FCM review and which better regulation action could be taken.

7.1 Better Regulation Opportunities in the FCM Framework

Opportunity	Related Regulatory Bottlenecks	Further explanation / information	Better Regulation Action
Take the circular economy into account when designing and redrafting the FCM. For example, regarding the re-introduction of substances when regulating substances in the FCM framework (and beyond)	A, Q, 1, 2, 10	Most of the hazardous substances that are detected in SRM are introduced during the design phase of food packaging. In a linear economy, these hazardous substances pose a less significant problem for human health. For example because of the use of functional barriers made of PRM. However, in a circular economy, these substances can be reintroduced in one way or another. Creating a toxic free environment therefor calls for the better regulation of hazardous substances from entering the circular economy in the first place. This means taking into account the circular economy in the design phase of FCM.	Re-regulation: Change existing regulation
Align the FCM framework with the WFD and PPWD	Q, R, 10, 46	The current FCM regulatory framework is bound by the scope as laid down in Regulation 1935/2004. Therefore, it has to take into account the effects of WFD. This means that FCM has to deal with the requirements for waste management, recycling and packaging as regulated in the WFD. Waste management is the result of the transposition of WFD directives. However, the placing on the market of FCM-SRM and products containing FCM-SRM to fall under FCM framework.	Re-regulation: Change existing regulation
Align the FCM framework with REACH	Q, R		Re-regulation: Change existing regulation

[46] That would require a more in-depth impact assessment.

Address SRM in general and recycled materials specifically (in definition and / or requirements)	A, Q, 1,2, 38		Re-regulation: Change existing regulation
Consider establishing a positive list / harmonized list / negative list for substances for the manufacturing of FCM in general (that is not restricted to plastics)	35,		Re-regulation: change existing legislation
Harmonize requirements for paper and board	O, 4, 36		Re-regulation: change existing legislation
Harmonize the DoC for all FCM and standardize DoC requirements to a certain extent	B, 3, 4		Re-regulation: change existing legislation
Provide clarity on offcuts and scraps	40, 49	Addressing offcuts and scraps was already foreseen for the 16th amendment (Boucher ,2020 & Callaert, 2021). The classification "Lack of interpretation" can be addressed by regulation. Potentially offcuts and scraps can also be addressed in the Framework Regulation to also apply to non-plastic offcuts and scraps in non-plastic recycling scenarios.	Re-regulation: Change existing regulation; Improve application: Provide Guidance or implementation documents
Provide clarity on the labeling requirements for recycled materials	13, 23, H		Re-regulation: Change existing regulation; Improve application: Provide Guidance or implementation documents

Table 23 Opportunities to better regulate SRM in the FCM Framework

7.2 Better Regulation Opportunities in the amendments of Regulation 10/2011

Opportunity	Related Regulatory Bottlenecks or further explanation	Further explanation or additional information	Type of Better Regulation
Address bio-based materials and materials deriving from natural sources used for FCM or food packaging materials. Potentially establish requirements for	L, 28	Addressing wood flour and fibers, untreated and bamboo was foreseen for the 16th amendment. Clarity can be provided when they are specifically addressed instead of leaving bio-based materials unlegislated.	Reregulation: Change existing regulation
Provide clarity on offcuts and scraps	39, 40	At this moment the only information about offcuts and scraps is in the provision 7 of Regulation 282/2008. This gives no legal clarity. Addressing offcuts and scraps was already foreseen for the 16th amendment. (Boucher,2020 & Callaert, 2021).	Re-regulation: Change existing regulation; Improve application: Provide Guidance or implementation documents
Address SRM and recycled materials and their requirements.	I, 2 38, 29, 31 33, 34, 41,		Re-regulation: Change existing regulation; Improve application: Provide Guidance or implementation documents

Table 24 Opportunities to better regulate SRM in the amendment to Regulation 10/2011

7.3 Better Regulation Opportunities in the review of Regulation 282/2008

Opportunity	Related Regulatory Bottlenecks or further explanation	Further explanation	Type of Better Regulation
Conduct an impact assessment of Regulation 282/2008	G, K, 21	No impact assessment or public consultation has taken place that specifically addressed Regulation 282/008	Better Regulation Preparation
Expand the scope of Regulation 282/2008	29, 30, 33, 34		Re-regulation: Change existing regulation; Improve application: Provide Guidance or implementation documents
Address future and novel recycling technologies	31, 33		Reregulation: Change existing regulation
Provide regulatory clarity for material deriving from chemical recycling	C, 23, 29, 30, 31		Re-regulation: Change existing regulation; Improve application: Provide Guidance or implementation documents
Align processes and the definitions between the FCM and the PPWD and the WFD for example regarding 'recycling' 'recycling process', 'recycled plastic', 'recycled plastic materials and articles' and other definitions in the upcoming revisions of the FCM Regulation	A, C, R, 45		Reregulation: Change existing regulation
Address article 6 of Regulation 2019/904 in the scope or definitions of Regulation 282/2008	45		Re-regulation: Change existing regulation;

Reconsider the conditions for authorization of recycling processes (Article 4)	E, 10, 11	The focus for the authorization is on the quality of the input material. Multiple contributions to the draft mentioned that this limits the input material being used with the current and future recycling technologies. Eventually, the quality of the output is the most important criteria for food contact application.	De-regulation or improve application
Re-evaluate the requirements for the plastic input (Article 4b) and evaluate if more flexibility regarding plastic input is possible	10,11	Plastic waste may contain levels of materials that are not manufactured in accordance with Regulation 10/2011. The regulation could recognize the waste management and sorting realities that are the result of the WFD and could add more technological flexibility regarding the plastic input. For example permit to remove non-food contact materials and articles to the extent practicable from the plastic input that enters the decontamination process	De-regulation or improve application
Provide clarity on the labeling requirements for recycled materials	H, 23, 44	In the review of Regulation 282/2008 Article 11 of Regulation 282/2008 regarding "Labelling of recycled plastic materials and articles" is not taken up. Labelling is not addressed.	Re-regulation: Change existing regulation; Improve application: Provide Guidance or implementation documents

Provide clarity on the enforcements and controls of recycling facilities[47]	The requirements for official controls of recycling plants is insufficiently clear The requirements for official controls of recycling plants outside EU is insufficiently clear. The requirements and the obligations for the license holder are not sufficiently clear	Enforcement and official controls are addressed in the review of Regulation 282/2008, but this does not address the identified bottlenecks	Re-regulation: Change existing regulation; Improve application: Provide Guidance or implementation documents
Include a timeline for the authorization of recycling processes	N, 21,22, 32		Re-regulation: Change existing regulation
Include a transition period (for when Regulation 282/2008 completely comes into force)	21, 22	When the Commission authorizes a recycling processes by submitting an opinion to the Standing Committee on the Food Chain and Animal Health granting or refusing authorization of the recycling processes, articles 3,9,10 & 12 of Regulation 282/2008 will enter into force. This could make some FCM that are on the market for years illegal overnight as they were subjected to member state rules. The review of 282/2008 contains Transitional provisions.[48]	De-regulation (loosen rigidly prescribed requirements)

Table 25 Opportunities to better regulate SRM in the review of Regulation 282/2008

[47] These bottlenecks were not analyzed into depth and therefore not considered earlier. Instead, it has been taken up as further research. However, considering the review of Regulation 282/2008 raised questions regarding this topic it has been mentioned here.

[48] It must be addressed that in the review the transitional provision applies to all recycling processes for which a valid application has been submitted according to Article 5 of Regulation 282/2008 and does not limit itself to recycling processes for which a favorable opinion has been given (Article 5.4.)

7.4 Better Regulation Opportunities by Better Governance

Opportunity	Related Regulatory Bottlenecks or further explanation	Further explanation	Type of Better Regulation
Re-evaluate the safety evaluation criteria used by EFSA for recycling processes	E, 9, 8, 11, 18, 19, 20	Franz & Welle (2022) for example that that a slight reduction in over-conservatism have huge effects in the safety evaluation and can increase the possible application of PCR	De regulation, Better Application, Better Governance, Guidance or implementation documents / Assistance / Network and cooperation structures
Develop guidelines and publish scientific opinions for the safety evaluation of other recycling practices and scenarios	D, 6, 15, 16, 47, 48, 47		Improve application: Provide Guidance or implementation documents
Establish targets for the uptake of SRM in FCM	P, 37	Possibly in another framework or other regulation.	Re-regulation: change existing regulation
Provide clarity about which recycled materials do count towards the recycled material targets set in Directive 2019/904	45		Improve implementation

Table 26 Opportunities to better regulate SRM in other regulatory measures

PART 3 CONCLUSION, DISCUSSION AND FURTHER RESEARCH

8 Findings

This thesis was guided by the research question "What are the possibilities to better regulate the uptake of SRM into food packaging material in the upcoming review of the Food Contact Material regulatory framework to facilitate a sustainable transition towards a European Circular Economy?"

8.1 Addressing bottlenecks with Better Regulation

To answer the research question, this thesis first explored how bottlenecks can be identified and how they subsequently can be addressed by the better regulation principles and agenda. This thesis used the BRIGHT method as a starting point and adapted it subsequently with an analytical framework (PGRSI framework) and additional categories. The BRIGHT method itself provided a working method for the identification of better regulation opportunity moments, whereas the PGRSI framework allowed for a methodical identification of regulatory bottlenecks, and the adapted BRIGHT Bottleneck Issue and Action categorization for the identification of better regulation possibilities. Resultingly, the adapted BRIGHT method identified the following better regulation possibilities:

1) Reregulation;
    a. Change existing regulation;
    b. Draft / propose new regulation;
2) Degulation;
    a. Repeal existing regulation;
    b. Weaken existing regulation;
3) Improve application;
    a. Establish or improve guidance and implementation document;
    b. Establish or improve assistence;
    c. Establish or improve network and cooperation structures;
    d. Other actions aimed at better implementation, compliance or enforcement

8.2 Legal context for the uptake of SRM into food packaging material

Then, this thesis explored the current legal context for the uptake of SRM into food packaging material. As shown in chapter 2, food packaging is subject to

various regulations, including the Framework on FCM, the Framework on Waste, the Framework on Chemicals and the Framework on Food. As this thesis was interested in better regulation opportunities in the FCM review, the research performed in this thesis was limited to the FCM framework. Subsequently in chapter 5 section 1, five current possibilities use SRM in FCM were identified:

1) Inclusion of offcuts and scraps from the production of plastic food contact materials;
2) Inclusion of by-products and recyclates in plastic (multi-layer) materials and articles;
3) Use of recyclates from processes authorized by EFSA;
4) Use of by-products and recyclates in plastic materials and articles behind a functional barrier;
5) Inclusion of by-products and recyclates materials and articles in paper and board.

It must be stated that the possibilities for the uptake of SRM into food packaging are broader than the above mentioned five possibilities. Food packaging is not limited to FCM/A. Food packaging can use additional materials and layers in which SRM can be used, that are not necessarily defined as FCM. It remains however questionable whether using such additional layers and materials are facilitating a transition towards the European CE, as the European CE is also based on the waste hierarchy in which prevention of generating waste is the most favoured option.

8.3 Current regulatory bottlenecks for the uptake of SRM into food packaging material

Subsequently, this thesis identified the current bottlenecks for the uptake of SRM in FCM/A. Based on mapping information in the PGRSI framework a list of bottlenecks was identified and further analyzed with available literature and policy documents. Based on the BRIGHT classification (section 3.2.2.2) bottlenecks suitable for better regulation were identified. In chapter 5 section 3, table 13, these bottlenecks were presented.

It must be stated that the regulatory bottlenecks for the uptake of SRM into food packaging is broader than the presented bottlenecks. As indicated, the research focused specifically on the FCM framework and therewith did not delve further into the other frameworks such as the framework on waste and chemicals that could pose interconnection problems for the uptake of SRM in FCM. Furthermore, the presented bottlenecks ignored fundamental issues in the FCM-framework that were already identified by the European Commission in the Inception Impact Assessment and was furthermore limited by the available data presented in the public consultations. Also, the analysis was guided by the focus on regulatory bottlenecks with a better regulation potential.

Furthermore, it can indeed be concluded that there are following the conclusion of Fleurke (et al., 2019) currently no direct obstacles for the uptake of recycled raw materials plastic packaging. However, this is mainly because provision 3, 9, 10 & 12 of Regulation 282/2008 are not in force yet. Due to this plastic recyclates are subjected to MS rules regarding use, requirements and conditions and could in theory became illegal overnight. There are thus no direct regulatory obstacles on an EU level but the consequences of the current regulatory framework limits availability of quality SRM that are legally allowed for FCM and businesses can use. Also, (future) legal uncertainties regarding allowed use of SRM, and where in the FCM it can be used also seem to impact the uptake of SRM. So, despite there being no direct regulatory obstacles, there is still a potential to better regulate SRM for FCM.

8.4 Possibilties to Better Regulate

Lastly, this thesis explored how the identified regulatory bottlenecks could be addressed with better regulation. As shown in chapter 3 the better regulation agenda of the EU offers several possibilities to better regulate an issue, depending on the type of EU intervention, characteristics of the issue and status in the policy cycle. Following the BRIGHT method, several better regulation input opportunities were identified for the selected bottlenecks in chapter 6 section 3.

This thesis was specifically interested in the possibilities to better regulate SRM into food packaging in the upcoming review of the FCM-framework. Chapter 7 therefore, focused on the bottlenecks that could be addressed during the

upcoming public consultation of the FCM framework. Specifically, the chapter proposed which topics or issues to address, as well as why and how to address these with better regulation. As the bottlenecks with potentially a big impact on the current and future uptake of SRM are, however, located in the application of the FCM regulatory framework, the thesis extended the better regulation possibilities beyond the upcoming review of the FCM framework in section 7.4 to give additional attention to these bottlenecks. The in-depth analysis concluded that the design of the safety evaluation criteria used by EFSA for recycling processes for the subsequent authorization of these recycling processes by the European Commission would be the main obstacle for the uptake of SRM in FCM/A. The strict application of Article 4.c of Regulation 282/2008 by EFSA, with the current design of the safety evaluation, will impact the legally availability of SRM that can be used for FCM that also meets business requirements as soon as Regulation 282/2008 will completely enter into force. As these bottlenecks are located in the application of Regulation 282/2008 these bottlenecks however thus do not necessarily require better regulation under the FCM review. Instead, these issues could be addressed regardless of the FCM review and with actions falling under improved application or better governance.

Concluding the findings in light of a sustainable transition towards a CE, the FCM framework should take the CE into account as a given and not just as an objective. This means that the FCM regulatory framework must recognize that the (hazardous) substances whose use is authorized by the framework will be reintroduced at another point in the economy, either by the FCM framework itself, or by another framework. This is particularly important to ensure public and environmental health and safety which are the societal and the environmental element of the CE. The same thinking holds for the authorization of FCM/A as a whole. The FCM framework should recognize that in a CE, the authorized FCM/A will be reused or recycled at some point. Taking the CE economy into account thus means addressing the material life-cycle of substances, but also distinguishing between primary and secondary raw material in the basis of the FCM framework. It also means aligning the FCM regulatory framework in definitions and processes better with the frameworks on waste and chemicals. Taking the CE as the basis will ultimately facilitate the uptake of SRM in both FCM/A and food packaging in all three elements of the CE.

9 Discussion: implications of finding in broader context

This chapter discusses the findings of this research in a broader context. Although the research focused on the identification of regulatory bottlenecks for SRM in the regulatory FCM, during the analysis of the contribution to the public consultations other bottlenecks came to the attention as well. These, and other societal challenges are discussed in this chapter.

9.1 Address the overal safety of FCM for a sustainable transition

This thesis was guided by the question how to facilitate a sustainable transition towards a CE. The CE has been defined as a systemic approach to economic development designed to benefit both economy, as well as society and the environment (Ellen MacArthur Foundation, n.d.). A sustainable transition must thus both take into account economic impacts as well as impacts on society and the environment. An indicator of a sustainable transition in light of the CE is the ensuring of public and environmental health and safety.

The FCM regulatory framework is adopted to provide the basis "for securing a high level of protection of human heath (…)" (Article 1 of Regulation 1935/2004). The principle underlying the FCM framework is that FCM/A intended to come into directly or indirect contact with food "must be sufficiently inert to preclude substances from being transferred to food in quantities large enough to endanger human health" (Recital 3 of Regulation 1935/2004). The analysis of the public consultation contributions, as well as the literature review, made clear that there are safety concerns related to FCM/A with the current framework. These safety concerns are not only related to the uptake of SRM in FCM as already stated in the introduction of this thesis, but instead to final FCM with or without SRM. Regularly, investigated FCM are not compliant with FCM regulations and substances of concern are found to migrate to food (Geueke & Muncke, 2018; Groh et al., 2019). These concerns ultimately impact the main objectives of the protection of human health that are present in both FCM, chemicals and food frameworks as well as in the CE.

The safety issues within the current FCM regulatory framework are interlinked with the other fundamental issues identified by the European Commission in the evaluation of the FCM framework (see section 6.1.2). For example, insufficient

exchange of information in the supply chain and the lack of enforcement of rules on FCM contribute to the safety concerns. In the Inception Assessment of the FCM framework the European Commission indicated that these issues need to be addressed in the upcoming FCM review. In the literature and the public consultation contributions specifically addressing NIAS and IAS, hazardous substances in both harmonized and non-harmonized materials, and the compliance to and functioning of Article 3 of Regulation 1935/2004 , were indicated as issues that urgently need to be addressed in the review of the overall FCM framework. The indicated fundamental issues directly and indirectly impact the uptake of SRM in FCM as they contribute to the overall and final safety of FCM.

Therefore, addressing the fundamental issues in the review of the FCM framework seems to be a prerequisite before a sustainable transition to a CE can be made for FCM with the incorporation of SRM. This conclusion is in line with other scholars arguing that the present EU regulation on products, waste and materials are not appropriate for transitioning to a CE (Alaranta & Turunen, 2021). Furthermore, this remark is also in line with the conclusion of this research given in section 8.4 that the FCM framework must address the presence of hazardous substances resulting from reintroduction more sufficiently. Lastly, it thus also seems too early, as the contributions in the public consultation for the review of Regulation 282/2008 indicated, to re-regulate recyclates before the overall framework has dealt with the fundamental issues properly. To better regulate SRM for food packaging in the short term, the two amendment-approach to Regulation 282/2008 (see section 6.1.1) might be more appropriate.

9.2 Address the overal sustainability of FCM and generate less waste

Another concern that needs to be considered during the review of the FCM framework is the overall sustainability of FCM. This research focused on the current challenges using SRM in FCM and has been guided by the question what the possibilities are to better regulate the uptake of SRM into food packaging within the current FCM framework. Addressing these regulatory issues and challenges has great potential for contributing to a more CE as they increase resource efficiency. It can however not be left to be mentioned that this research also revealed weaknesses in the current transition towards a more sustainable

economy. Purely focusing on the use on recyclates might divert away from the main problem which is the generation of (plastic) waste in the first place and its (indirect) pollution consequences. The current FCM framework does address this problem with the possibility to use recyclates, especially with Regulation 282/2008. However, from both a sustainable waste management perspective as a CE perspective, recycling is not the preferred approach. According to the waste hierarchy introduced in section 2.2, first prevention, second minimization, third reuse of articles and materials should be considered, before recycling and using recyclates should be applied.

The current FCM framework lacks such a sustainability approach. There are for example no design rules for FCM or for food packaging that consider these sustainable waste management principles or other life-cycle assessments. Instead, the FCM framework is focused on enabling the manufacturing of FCM/A and the placing on the market in a linear economy while protecting human health and securing the interest of consumers and ensuring the functioning of the internal market. It does thus not specifically the take the protection of the environment, the minimization of waste or resource efficiency into account. It remains the question if these sustainability requirements should be incorporated in the FCM framework or that the waste framework should further elaborate on this, especially considering that the scope of the FCM-framework is currently first and foremost if focused on ensuring safety of the FCM/A and the functioning of the internal market, whereas the PPWD and SUP are aimed at preventing the impact of (plastic) packaging waste.

Nevertheless it needs to be acknowledged that the use of recyclates holds benefits over PRM (Grosso et al., 2017) and reuse of packaging might not be feasible for plastic (Geueke et al., 2018). Furthermore, alternatives to certain packaging solutions such as multi-layer packaging that offer the same level of quality and safety protection are currently not viable (Matthews et al., 2021). Making the FCM framework more suitable for recyclate would also benefit the CE.

Also, as stated in the introduction of this thesis, SRM's differ from recyclates as these materials are intended to be recycled [49], whereas SRM's could also be reused[50] in the same form, downcycled, upcycled or disposed. Making the FCM framework more suitable for the incorporation of by-products could classify as reuse or even minimizing waste as these materials will not enter the waste stage. This will benefit the CE and other sustainability objectives.

Notwithstanding, the realities and the consequences of the transition to a CE should be acknowledged such as the increasing demand for SRM for FCM/A due to minimum content laws, recycling targets and material bans. These requirements have an impact on waste management, material recyclability and the demand of both PRM as well as SRM. The banning of single-use plastic and the minimizing PRM goals for example lead to a changed demand for other FCMs such as paper and board, bamboo and other future and innovative materials. Regardless of the promotion of prevention and reuse over recycling, a sound and future proof regulatory framework for recycling, and using SRM thus needs to be in place. This also requires that the FCM framework is better integrated in the (circular) life cycle of (plastic) (food) packaging (materials). The CE should for example integrated in the design of FCM, by restricting certain substances (of concerns) to minimize the risks of reintegration (Geueke et al., 2018), or to reduce the complexity of current FCM/A such as multi-layers to enable better recyclability and reuse (Matthews et al., 2021; Soares et al., 2022).

9.3 Address the revision of Regulation 282/2008 in the waste context and better integrate FCM in the frameworks for waste and chemicals

For a proper functioning of the CE efficient waste management infrastructures are with the current recycling and packaging technologies a prerequisite. In the EU this is mainly regulated by the WFD and the PPWD. As the scope of this

[49] Re-cycling according to the WFD means "any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations" (Article 3.17)

[50] Re-use according to the WFD means "any operation by which products or components that are not waste are used again for the same purpose for which they were conceived" (Article 3.13)

research focused on the FCM framework particularly, it took the waste management infrastructures coming from the waste framework as a given.

It cannot however be left to mention that the waste framework is based on directives which leaves the waste management and collection infrastructure up to the MS. In contrast, the FCM regulatory framework and specifically Regulation 282/2008 are based on regulations, setting an EU wide standard for the recycling of plastic waste for FCM. This complicates the efficient recycling of waste for FCM, as the composition and quality of waste differs per MS or even per region or local authority. Furthermore, most of the food packaging in Europe is collected in systems where food packaging and non-food packaging are collected together in municipal waste. The waste framework does not explicitly consider FCM requirements such as that "the plastic input must originate from plastic materials and articles that have been manufactured in accordance with Community legislation on plastic food contact materials and article (…) (Article 4.b of Regulation 282/2008). This specifically complicates Article 4.c of Regulation 282/2008 in particular because EFSA applies this rather strict in the safety evaluation and requires full traceability and 95-99% sorting efficiency. Revising the current FCM framework has to take the waste management, infrastructure and recycling realities coming from the WFD thus into account when drafting requirements and procedures for specifically SRM.

It is unquestionable that the current material status division in these frameworks impacts the realization of a complete circular material life cycle. This shows that in the short run not only the FCM framework needs to be better integrated with waste framework and the chemicals framework, but that those frameworks also must take the FCM framework into account. This can for example be done in the upcoming better regulation opportunities as identified in section 6.2.1 and 6.2.2. For the long run the FCM requirements and its consequences also must be considered in the material life cycle. It has been argued that the border between waste and chemical framework needs to be erased and that a single regime for the regulation of materials needs to be established to deliver on the objectives of the CE (Alaranta & Turunen, 2021). Considering the FCM and specifically Regulation 282/2008 is currently bordering both frameworks it needs to play a central role in this integration.

A question that furthermore needs to be considered in light of these regulatory developments is the status of SRM. Fleurke (et al., 2019) stated that the current FCM regulatory framework does not make an explicit distinction between PRM and SRM as long the materials comply with the same (safety) criteria. SRM thus must adhere to the current requirements for PRM. The results of this research instead propose to distinguish between PRM and SRM in the basis of the FCM framework to make the requirements for the uptake of SRM clearer. Considering the transition to the CE, going one step further would maybe even be preferable and that is making SRM the default in the future regime.

9.4 Failing Better Regulation in the revision of Regulation 282/2008

This thesis was also guided by the question how to better regulate SRM within the FCM framework. So far, this thesis has focused on the improvement of the design of EU actions to ensure that policy goals and objectives are achieved in an efficient, effective, and coherent manner. Better regulation however is not only an objective but also a policy process with an accompanying principles and tools. However, the current FCM review showed shortcomings regarding the application of these better regulation tools and principles, specifically regarding the revision of Regulation 282/2008.

9.4.1 Failing the Better Regulation Workflow: Impact Assesment & Timeline

Better regulation as a policy process is based on two documents: the main Better Regulation Guidelines setting out the internal instructions for the European Commission staff for each step in the policy cycle (European Commission, 2021d) and the Better Regulation Toolbox provides additional guidance and advice (European Commission, 2021c). The guideline contains mandatory requirements and obligations[51], whereas the steps of the toolbox are not binding unless stated otherwise.

A fundamental step of better regulation is consultation. Consultations is important mean to collect evidence, as well as to ensure transparent and

[51] But "they cannot be construed as legally binding rules or legal commitments towards outside actors and stakeholders" (European Commission, 2021d: p.3).

coherent policymaking. The consultation system is based on both targeted ("feedback") and public consultations and on the principles participation, openness and accountability, effectiveness, and coherence. Specifically the principle effectiveness here means "consult at a time when stakeholder views can still make a difference, taking account of proportionality and specific restraints" (European Commission, 2021d: p.14). This principle leads to the standard that there should be sufficient time for participation.

The draft on the Regulation on recycled plastic materials and articles intended to come into contact with foods, and repealing Regulation (EC) No 282/2008, is a new legal act intended to replace and repeal Regulation 282/2008.[52] The toolbox recommends that for new legal acts, revision of existing legal acts, and recasts of existing acts, the need for an impact assessment needs to be assessed. An impact assessment is not required for initiatives with no significant impact such as legal codifications or "policy initiatives proposing limited changed based on a thorough evaluation" (European Commission, 2021c: p.44 & 45).

Impact assessments are an approach to collect evidence on a problem to be tackled with EU action. The impact assessment is both an instrument to identify and describe the problem and its impacts, as well as the subsequent action and its potential environmental, social and economic impacts. All evaluations and impact assessments accompanying proposals for legislative revision must analyze the potential for simplification and burden reduction. According to the guidelines, stakeholders should be consulted when preparing an initiative accompanied by an impact assessment, preferably with an internet-based public consultation of a minimum of 12 weeks.

The revision of Regulation 282/2008 was not accompanied by an impact assessment nor by an internet-based public consultation of 12 weeks. Instead, the draft act was relatively sudden published and feedback was enabled for five weeks from 06 December 2021 until 18 January 2022. The next planned step

was the adoption of this draft act in the first quarter of 2022. This adoption had so far (July, 2022) not taken place.

The consultation process regarding this initiative failed the better regulation principles. The guidelines acknowledge that the Better Regulation Guidelines and the Toolbox are not a procedural requirements per se. Instead, they should be applied with common sense and should ensure that the Commission is equipped with relevant and timely information on which it can base its decisions. For example, it is not necessary to conduct a 12-week consultation each time for developing an initiative when multiple better regulation steps are required.

As Golberg (2019) notes, Better Regulation should not become an end itself. Nevertheless, evaluation especially given technological developments and innovation, is key. The Commission could argue that for the FCM framework two previous 12-week consultations had taken place (the FCM Evaluation and the FCM Inception Impact Assessment). These consultations however addressed the whole FCM framework, and as already expressed in section 4.1.2, hold severe limitation regarding the analysis of the current functioning of Regulation 282/2008. Furthermore, the consultation ran during the Christmas holidays and New Year. This limited the time of contribution to 4 weeks and thus impacting the effectiveness of the consultation. The toolbox recommends that the feedback period for public consultation that take place during the summer holidays should be extended to 14 weeks (p.445). The consultation strategy in this initiative thus might impact the quality of the information on which the Commission can base its decisions. The Commission could argue that it made use of targeted stakeholder consultations instead of holding a public consultation, specifically because Regulation 282/2008 is a more technical regulation specifically impacting certain stakeholders. This however would fail the transparency principle and contribute to the criticism the Commission overemphasizes the opinions of certain stakeholders over individuals and therewith feed the democratic deficit critique (Schout & Swieter, 2018). A proper impact assessment is therefore recommended before proceeding to adoption.

9.4.2 Failing the Better Regution principles: Think Small First & Strategc Foresight

The revision of Regulation 282/2008 furthermore also fails on the better regulation aim-principles. One of the principles of better regulation is to design EU action that are simple, easy to understand and to apply. This principle is linked to the principle "Think Small First" that considers SME's interest (European Commission, 2017). One of the issues that was mentioned in the public consultations for the current FCM framework is that the FCM framework and the interconnection with other frameworks is difficult to comprehend for both specialists and the typical SME impacting both compliance and enforcement.

Specifically, evaluations should analyse simplification and burden reduction. For example, a codification for Regulation 10/2011 has been requested considering the Regulation has 15 amendments. The draft for the revision of Regulation 282/2008 however seems to overshoot the simplification principle, as it significantly complicates the requirements for recycled plastic FCM due to the introduction of new requirements and more complicated rigid and detailed definitions to which substantial feedback was delivered. An example is the Declaration of Compliance for batches (Article 29 & Annex III) which substitutes the reproducible quality requirement from Regulation 282/2008. A proper impact assessment again seems to be appropriate before proceeding to adoption.

Furthermore, in the inception impact assessment of the FCM framework the commission acknowledged that the current framework does not encourage development of safer and more sustainable alternatives. One of the better regulation principles that got introduced with the 2021 Better Regulation Agenda is the strategic foresight into policy making. The objective of this principle is to engage with possible different and alternative futures by challenging present assumptions and broadening the policy horizon. The draft of the review is criticizing for being less instead of more future proof. The draft for example focuses on decontamination methods instead of the final decontamination performance.

The guideline recommends for strategic foresight to develop and using system thinking to identify topics beyond the framework under scrutiny and establish

relations in a dynamic and changing context. The developed PGRSI framework in this thesis can serve as a basis for this in the evaluation of the FCM framework in a CE context.

10 Concluding remarks

10.1 Limitations

The results and conclusions of this thesis are constraint by several research limitations. Most limitations have already been raised along this thesis[53]. In this section the remaining limitations are stated.

10.1.1Data assesment and evaluation limitations

The first phase of the BRIGHT method consists of three consecutive steps:

1. Collect and Evaluate
2. Organize collected bottlenecks
3. Assessing EU Competence

First, the research mixed these three consecutive steps and scrutinized information with the specific research question in mind. Due to this, the EU competence of bottlenecks was not necessarily assessed as a separate step. Also, not all the bottlenecks were taken upon in the PGRSI framework as they were already identified by the European Commission in the Inception Impact Assessment or did not hold a regulatory component.

Second, the research did not evaluate the identified bottlenecks. The BRIGHT method advices in both the 'Collect input' as well as in the 'Zoom in' phase to evaluate the findings. In the first phase 'Collect input' the identified bottlenecks should be evaluated to reflect if the bottlenecks that are identified are recognized by stakeholders, are widely held, and indeed can be classified as problematic. This research initially planned to hold subsequent interviews with stakeholders and experts in the FCM value chain. These interviews were aimed to validate the findings from the public consultations and the literature review, to verify the identified bottlenecks and receive additional information. Due to constraints of this research, the interviews turned out to be beyond the scope of this research. Therefore, this research proceeded with the identification of a bottleneck as such

[53] See for example sections 1.5 4.1.2, 4.2.1.2, 4.2.2.1 and 4.2.3.1.

only. The second phase 'Zoom in' also recommended an evaluation step in the form of focus sessions or questionnaires to acquire more information on the identified (regulatory) bottlenecks, for example regarding causal relationship. Again, as interviews were beyond the scope of this research, this research instead drew on an additional (grey) literature for information and a made use of the PGRSI framework to establish or identify causal relationships. Not in all cases a causal relationship (driver or consequence) could be established or specific information on the problem could be established. Some of the identified bottlenecks are therefore not presented in the results of this research and have been moved to recommendations for further research (see section 10.2s.1).

10.1.2Data & scope limitations

The identified bottlenecks are based on the results to three FCM contributions. This was because this researched focused on bottlenecks that could be addressed in the upcoming review of the FCM-framework. However, as indicated in Chapter 2 on the Regulatory Framework, food packaging is more than just FCM; Although there is no legal definition of what FCM/A is (in Regulation 1935/2004) food packaging consists of more than just FCM/A. The PPWD, as well as the SUP directive for example contain requirements that also apply to food packaging. As this study focused on the FCM framework specifically it decided to study the contributions to the FCM consultations. However, bottlenecks for food packaging could be in these other directives that regulate packaging, or in the interconnection of these directives with the FCM-framework. Due to the constrains of this research these were however not identified or studied in more depth. This study therefore could be extended by analyzing the contributions to the 2020 Packaging and Packaging Waste Inception Impact Assessment, and the contributions to the 2020 Public Consultation on Packaging and Packaging Waste, before proceeding to hold more in-depth interviews with stakeholders. Also, due to the data the research mainly focused on plastics recyclates. There are however other SRM that deserve more attentions such as bio-based plastics and EoW materials. The contributions to the Roadmap for the Policy framework on biobased, biodegradable and compostable plastics might hold interesting findings that can complement the results of this study.

10.1.3Time limitations

This data collection has taken place between September 2021 and February 2022, whereas the data was analyzed after. Due to the time between the contributions to the public consultation, the analysis of the contributions and the publication of this thesis, some identified bottlenecks were already addressed in one way or another. For example, many issues raised in the contributions to the FCM evaluation were identified in the Green Deal strategies and subsequent in the Inception Impact Assessment to the FCM review. Another example is the plastic tax that was introduced as of 1 January 2021, which partly tackled the bottleneck 'virgin plastics are not taxed, nor are recycled plastics economically treated differently'. These bottlenecks are still present in Annex 5 but not taken up in section 5.2.2.

Furthermore, the FCM review was still ongoing during this research and the presentation of this thesis. This not only impacted the available and assessed data, but also complicated it as new reports were published while writing and researching. Developments after February 2022 have not been taken up in this thesis. Also, it impacted the better regulation opportunities, specifically as several communicated planned better regulation steps were not taken or delayed. The conclusion of this thesis therefore should be read in light of the current better regulation opportunities as communicated during the course of this thesis.

10.2 Recommendations for further research

10.2.1Further research into bottlenecks

Not all the bottlenecks that were identified during this research were selected or further analyzed due to research constraints and limitations. Therefore, these bottlenecks were, with an exception, not taken up in the identification of better regulation opportunities. However, for further research the following information could be studied in more depth to see whether they qualify as bottlenecks.

Bottlenecks for further research	
Regulatory Bottlenecks	**Category**
The scope of Regulation 282/2008 excludes recycled plastic materials and articles in which the recycled plastic is used behind a functional plastic barrier	Scope: Recycling (use)
The SML and the OML for multimaterial multi-layer material and articles are not harmonized by European Law	Multimaterial
There are no specific measure for multimaterials involving paper and board	Multimaterial
The requirements for multimaterial mult0-layer are unclear	Multimaterial
Current certification schemes for recycled plastics do not requiring a physical connection between input and output	Labelling
The requirements to declare recycled content and label recycled materials are insufficiently clear	Labelling
The definition of 'plastic input' in Regulation 282/2008 limits the input into the recycling to decontamination of post-consumer waste	Recycling (input)
The requirements and the obligations for the licensee holder are not sufficiently clear	Recycling (authorization)
The functional barrier concept and its requirements are not sufficiently clear	Definition & Requirements: Functional barrier
The definition and application of byproducts is not sufficiently clear	Definition & Requirements: By-product
Rules to facilitate inspections from National Competent Authorities are insufficient / lacking	Enforcement & Official Controls
It is not sufficiently clear which actors in the waste management system should be audited	Enforcement & Official Controls
The requirements for official controls of recycling plants is insufficiently clear	Enforcement & Official Controls
Risk assessments of recycled plastics are not explicitly subject to control by National Competent Authorities	Enforcement & Official Controls
Requirements and obligations for recyclers located in non-EU countries are not sufficiently clear	Third countries
Requirements for converters using SRM or FCM with SRM from non-EU countries are not sufficiently clear	Third countries
There is an overlap in scope the FCM framework and the Drinking Water Directive 98/83/EC	Interconnection: Drinking Water Directive
Inclusion of FCM in the eco design directive	Interconnection; Eco design directive

Table 27 Overview of Bottlenecks for further and more in-depth research

10.2.2Extension of the BRIGHT input opportunity roadmap

In the third phase of the BRIGHT method the bottlenecks are matched with the Better Regulation Roadmap. This roadmap is limited to the input moments in the EU policy-making cycle. As the Bottleneck Issue and Action categorization has

been extended with 'Improve application' The BRIGHT roadmap could be extended with European agency input opportunity moments that are targeting the application of legislation. For example, EFSA has several consultation tools and mechanisms, such as calls for data, public consultation and open plenary meetings.

10.2.3Extension of the BRIGHT bottleneck classification

This study was concerned with the identification of bottlenecks in European regulatory frameworks. To systematically analyze bottlenecks, it used the BRIGHT method as a basis. This method however had to be adopted to become more useful in this research. This thesis adopted the BRIGHT method with a bottleneck classification issue and with bottleneck action issues. It also developed the PGRSI framework to systematically structure information and distill bottlenecks from this information. Although the bottleneck classification was needed to identify which bottlenecks hold better regulation opportunity, it didn't gave any insight on the type of legal problem. Examples of these problems are language and terminology, scope of the act, scope or requirements of a particular article, interconnection of the act, specific requirement andentry into force time. To become more useful in future studies the BRIGHT method could be adapted with these additional classification categories.

Furthermore, the BRIGHT method could be extended by the bottleneck issue categorization 'Alternative Regulation' that Radaelli & Meuwse (2009) include in their conceptual better regulation overview. The omitting of this category in this thesis can be explained by the bias that better regulation policies generally tend to focus on the making of legal rules as explained by Scott (2018). It can however also be argued that alternative regulation could figure as a deregulation or Better Governance subcategory instead of as an action category. To provide more clarity on the action categorize the BRIGHT method could benefit from drawing from public administration and management, and policy and administration literature.

10.3 Final observation

Lastly, from the consultations it became clear that compliance is complicated due to a lack of knowledge and data that is needed for risk assessment and lack of

communication that is needed for overall compliance. It has been mentioned in the consultations that there is not enough competent third-party lab capacity to conduct NIAS and contamination testing and analysis in Europe, there is an absence of reliable data on migration of FCM and that there is a lack of available toxicity and exposure information for substances. Also, compliance is complicated due to the lack of sufficient communication in the supply chain. Sufficient data and communication are prerequisites in any future scenario for the governance of sustainable food packaging and FCM/A. These issues could potentially be addressed by multi-level cooperation and by Better Knowledge and Better Funding.

Recalling, the BRIGHT method was developed in response to the Pact of Amsterdam (2016). The pact of Amsterdam launched the Urban Agenda for the EU (UAEU), which is a working method aiming to establish multi-level joint cooperation between MS, cities, regions, the European Commission and other stakeholders to find joint solutions to complex urban and territorial development issues. The Pact of Amsterdam and the subsequent initiatives undertaken by the UAEU were based on three pillars: Better Regulation, Better Funding and Better Knowledge. Each of these pillars aimed at improving the implementation of policies at the local level to enhance the complementarity of European policies. The Ljubjana agreement (2021) reaffirmed these pillars and continued the strategic thematic cooperation, as the UAEA introduced new working methods and provided useful insight into bottlenecks and challenges related to the practical implementation of EU policies and legislation (Ministers on Urban Matters, 2020; Ljubjana Agreement, 2021).

To realize the full potential of the EU, other sustainable development issues could and should encourages such a multi-level cooperative approach to enhance environmental, economic, social and cultural progress. Especially the complex issues such as the regulation of circular packaging could gain significantly from a multi-level approach grounded in the ideas of Better Regulation, Better Knowledge and Better Funding. This is because achieving a more sustainable food packaging in the CE requires the combination of different efforts and the involvement of all stakeholders in the agricultural, food, packaging, waste and recycling chain.

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11.2.1 Legislation

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11.4 Public Consultation Contributions

See Annex 1, Annex 2 & Annex 3 for contributions to the consultations.
E# Stands for Evaluation and can be found in Annex 1. IA# Stands for Impact Assessment ad can be found in Annex 2. D# stands for draft and can be found in Annex 3.

11.5 Other

This thesis was complemented by explorative interviews with Bethanie Almorth[54], Agathe Bour[55] Francesca Molinari[56] from Gothenburg University on September 30th 2021, Jonatan Kleimark from Chemsec[57] on October 1st,2021 and Birgit Geueke[58] from the Food Packaging Forum on October 11th 2021 and attendance at the Keller and Heckman Food Packaging Law Seminar and the Food Packaging Forum Workshop in October 2021.

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Annex 1 Results Consultation FCM Evaluation

FCM Number	Organization	Actor in	Mater	Please,	Source	Relevant	Comment	Reference Nu	Literal statement	Summary / interpretation	Category	Indicator	Subindicator	Other commer
F462654	CHEM Trust	NGO			Annex	Yes		**1**	The recitals of the framework regulat	Non harmonization leads to busine	Non-harmonization	**Social**	Compliance costs	
F462654	CHEM Trust	NGO			Annex	Yes		1	The recitals of the framework regulat	Non harmonization leads to conem	Non-harmonization	**Social**	Public health & safety and health systems	
F462654	CHEM Trust	NGO			Annex	Yes		1	Different industry sectors have produ	There is a lack of common guideli	non-harmonization	**Economic**	Functioning of the Internal Market	
F462654	CHEM Trust	NGO			Annex	Yes		1	"Different industry sectors have prodi	National rules can t be difficult to	non-harmonization	**Economic**	Functioning of the Internal Market	
F462654	CHEM Trust	NGO			Annex	Yes		1	Different industry sectors have produ	Testing methods are lacking for t	non-harmonization	**Economic**	Functioning of the Internal Market	
F462654	CHEM Trust	NGO			Annex	Yes		1	Lack of Information in the FCM suppl	Lack of information in the supply c	Information	**Economic**	Communication	
F462654	CHEM Trust	NGO			Annex	Yes		1	Lack of enforcementThere is a lack o	Enforcement resources are lacking	Enforcement	**Economic**	Public authorities	
F462651								2						
F462650	Familles Rurales				Annex			3						
F462648								4						
F462647	Collectif National des CÊramistes							5						
F462646	Food Packaging Forum Foundation	Science and research			Column FY	Yes		6	endocrine disrupting chemicals are nc	mixture toxicity of the overall mig	Migration data and risk assesn	**Social**	Public health & safety and health systems	
F462646	Food Packaging Forum Foundation	Science and research			Column FY	Yes		6	endocrine disrupting chemicals are nc	EDndocrine disrupting chemicals a	Migration data and risk assesn	**Social**	Public health & safety and health systems	
F462646	Food Packaging Forum Foundation	Science and research			Column FY	Yes		6	endocrine disrupting chemicals are nc	Detailed guidance on how to asse	Guidance	**Circular Economy**	Secondary Raw Materials	
F462646	Food Packaging Forum Foundation	Science and research			Annex	Yes		6	Inappropriate recycling processes ma	Concerns about contamination of	Safety	**Circular Economy**	Waste	
					Annex			6	SVHCs under REACH are authorised for use in FCMs although they are a		Interconnection: REACH	**Social**	Public health & safety and health systems	
F462645				Varnishes and c	Column FY			7						
F462644	Center for International Environmental Law (CIEL)							8	The EU must harmonize new rules ac	No consistency in the risk assesme	non-harmonization			
F462642				process oils used for adhesives and inks				9						
F462641					Column FY			10	Mutual recognition might be overlook	The functioning of the mutual recc	Mutual Recognition	**Economic**	Competition	
F462639								11						
F462638				Porcelain Enamel (very different from varishes and very di				12						
F462637	Polyolefin Circular Economy Platform - PCEP			Plastics				13	At time of writing, no Commission D	Absene of authorization creates ur	Recycling (authorization)	**Circular Economy**	Secondary Raw Materials	
F462635				Multi-layer articles Corrugated Board and packagings				14						
F462634								15						
F462633					Column EE			16	For identical food contact articles, different laboratories will perform diffi		Migration data and risk assesn	**Economic**	Compliance costs	
F462632	SAFE - Safe Food Advocacy Europe A.S.B.L.				Annex			16	Nowadays, consumers tend to prefer	Concerns about the safety of recy	NIAS	**Social**	Public health & safety and health systems	
F462632	SAFE - Safe Food Advocacy Europe A.S.B.L.				Annex			16	Nowadays, consumers tend to prefer	The adverse health effect of recyc	Knowledge	**Social**	Public health & safety and health systems	
F462632	SAFE - Safe Food Advocacy Europe A.S.B.L.				Column GA	Are†you are aware of any con		17	Need for a better coordination and a	The coherence between FCM and	REACH	**Economic**	Regulatory Burden	
F462630	APPLiA - Home Appliance Europe				Column GA	Are†you are aware of any con		18	APPLiA would like to inform of a potential scope-overlap and further dou		Drinking water	**Economic**	Regulatory Burden	
F462630	APPLiA - Home Appliance Europe				Annex			18	Table: Articles 1-3 of Regulation 193	Non harmonization increases compliance costs		**Economic**	Compliance costs	
F462630	APPLiA - Home Appliance Europe				Column DU	Have†you or a business you r		18	APPLiA manufacturers have had case:	The mutual recognition is not wor	Mutual Recognition	**Economic**	Functioning of the Internal Market	
F462629	APICER AssociaÅ„o Portuguesa das Ind´strias de Cer,mica e Cristalaria							19						
F462628				Multi-r	Paper / (	Column FY		20	Aids to polymerization (APIs) are exempted from positive listing under tl		Information	**regulatory Framework**		
F462625	Confederazione Nazionale dell'Artigianato e della Piccola e Media Impresa - CNA							21						
F462624	PlasticsEurope				Column GL	If you wish to add further infor		22	Article 18 & temporary national rules:	Article 18 & temporary national ru	Precautionary Principle	**Social**	Public health & safety and health systems	
F462622	Zero Waste Europe				Column GL	If you wish to add further infor		23	It should be ensured that recycled FC	Concerns about recycled materials	Safety	**Circular Economy**	Secondary Raw Materials	
F462620								24						
F462619	ACIBEV - AssociaÅ„o de Vinhos e Espirituosas de Portugal				Column FY			25	Harmonised specific measures at EU	Non harmonization of recycled pa	non-harmonization	**Social**	Public health & safety and health systems	
F462617				Plastics				26						
F462616	Kemikalieinspektionen (Swedish Chemicals Agency)				Column GA	Are†you are aware of any con		27	There is currently no link between FC	Insufficient link other regulation	Interconnection	**Economic**	Regulatory Burden	
F462616	Kemikalieinspektionen (Swedish Chemicals Agency)				Annex			27	There are ongoing discussions in EU (	Design of the package does not tz	Design	**Circular Economy**	Secondary Raw Materials	
F462615				Metals Producer of ETP, tin coated steel for can production				28						
F462613					Column CL	If you wish to add further infor		29	Ich hatte nie irgendein Problem mit e	Statements				
F462612				Paper · Paper	Column FY	Are†you aware of any contrad		30	The current legislation used in FCM d	FCMs are still not sufficiently cont	Enforcement	**Economic**	Public authorities	
F462612				Paper · Paper	Column FY	Are†you aware of any contrad		30	The current legislation used in FCM d	consistent and transparent risk ass	Risk assesment	**Economic**	Regulatory Burden	
F462607	Swedish Trade Federation (Svensk Handel)				Column FY	Are†you aware of any contrad		31	We believe there is a gap regarding t	Concerns about the enforcement (	Enforcement	**Economic**	Third Countries	
F462607	Swedish Trade Federation (Svensk Handel)				Annex			31	What is considered a polymer differs	between the SUP directive and the	Definition	**Economic**	Regulatory Burden	
F462606	Health Care Without Harm (HCWH) Eur	NGO			Annex			32	As the EU's transition to a circular ecc	Statements				
F462605	FCA (Food Contact Additives), a Sector Group of I	Others	Producer		Column FY	Are†you aware of any contrad		33	The testing on individual substances i	mixture toxicity of the overall mig	Migration data and risk assesn	**Social**	Public health & safety and health systems	
F462604								34						
F462602	VBO-FEB				Annex			35	Generally speaking there is a lack of	Lack of enforcement	Enforcement	**Economic**	Public authorities	
F462602	VBO-FEB				Annex			35	Innovation is one of the missing aspe	New materials are not taken up in	New materials	**Circular Economy**	Secondary Raw Materials	
F462602	VBO-FEB				Column DU	Have†you or a business you r		35	Bamboo FCM. No harmonised measu	non-harmonization for paper and	non-harmonization	**Economic**	Functioning of the Internal Market	
F462601	Federchimica				Annex			36						
F462600	Health and Environment Alliance (HEAL)							37						
F462597	Arnika - Toxics and Waste Programme as a member of IPEN							38						
F462596	ALB zu einem Auftrag der VSMK				Annex			39						
F462594	Photoinitiators Platform				Annex			40						
F462593					Column FY	Are†you aware of any contrad		41	We believe there is a gap regarding t	the enforcement of EU FCM rules fe	enforcement	**Economic**	Third Countries	
F462592								42						
F462590	European Federation of Ceramic Table a	Branche		Ceramics	Annex			43						
F462589					Column FY	Are†you aware of any contrad		44	1) The link between food contact saf	Concerns about contamination dur	Safety	**Circular Economy**	Secondary Raw Materials	
					Column FY	Are†you aware of any contrad		44	2) The so-called "cocktail effect",	meaning the synergies of several sub	Migration data and risk assesn	**social**	Public health & safety and health systems	
F462586	Airline Catering Association (ACA)				Column GA	Are†you are aware of any con		45	Compliance of closed loop recycled materials		compliance	**Circular Economy**	Secondary Raw Materials	
F462585	FEVE - The European container glass federation			Glass	Annex			46						
F462585	FEVE - The European container glass federation			Glass	Column GL			46	2) The overlap between food contact	There is lack of knowledge of the	Knowledge	**Circular Economy**	Waste	
F462581					Column FY	Are†you aware of any contrad		47	The lack of harmonisation has two m	Non harmonization leads to safety	Mutual recognition	**Social**	Public health & safety and health systems	
F462580	null							48						
F462579	ClientEarth	NGO			Annex			49						
F462576	FEDERACI"N ESPA—OLA DEL VINO							50						
F462575	ISEGA Forschungs- und Untersuchungs GmbH			Multi-material multi-layer articles (please specify)				51						
F462574					Column FY	Are†you aware of any contrad		52	Gap example: Some materials are nc	It is not sufficiently clear for multi	Multi material & Migration limit	**Economic**	Regulatory Burden	
F462573	Versalis(Eni)			Plastics	Column GA	Are†you are aware of any con		53	Inconsistencies ex.: (1) Chemicals:	there are substances listed as SVHC	Interconnection: REACH	**Economic**	Regulatory Burden	
F462573	Versalis(Eni)			Plastics	Column GA	Are†you are aware of any con		53	Inconsistencies ex.: (2) Lack of	harmonization between EU FCM and o	Interconnection	**Economic**	Regulatory Burden	
F462573	Versalis(Eni)			Plastics	Column DU	Have†you or a business you r		53	National specific rules can be very ou	National rules can be outdated	Non-harmonization	**Economic**	Compliance costs	
F462572	Fevia - Federation Belgian Food Industry				Column GA	Are†you are aware of any con		54	The interaction between FCM legislation and REACH deserves to be bet		Interconnection: REACH	**Economic**	Regulatory Burden	
F462571				Adhesi All Kind:	waterbased, Hotmelt, reactive adhesives			55						
F462570								56						
F462568								57						
F462567				Ceram GrÊs Êmaillé				58						
F462566				Plastics				59						
F462565				Varnishes and coatings				60						
F462564				Others Resins				61						
F462561								62						
F462560					Column FY	Are†you aware of any contrad		63	Legislation slow to incorporate recent	the FCM framework does not effe	Amendment / procedure	**Social**	Public health & safety and health systems	
F462558								64						
F462557				Printing inks				65						
F462556	null				Column FY	Are†you aware of any contrad		66	There is not a harmonised specific m	There is not a harmonised specific	non-harmonization	**Economic**	Regulatory Burden	
F462555				Ceramics				67						
F462554				Varnish Coatings for cans				68						
F462552	Det ýkologiske RÅd (Danish Ecological Council)							69						
F462551				Multi-li	M?anyagfÜli-k, Aluminium, PapÌr, ragasztÛk, festÉk			70						
F462548	null							71						
F462543								72						
F462541								73						
F462537	Association CÉramique La Borne							74						
F462535	Kemira Oyj			Others Chemica	Column DU	Have†you or a business you r		75	MS where own legislation exists for p	Mutual Recongition is not working	Mutual recognition	**Economic**	Regulatory Burden	
F462534				Plastics	Column FY	Are†you aware of any contrad		76	Safety of FCM and functioning of the	There is a lack of (transfer) (of de	Information & Traceability	**Economic**	Information and Communication technologies	
F462534				Plastics	Column FY	Are†you aware of any contrad		76	Safety of FCM and functioning of the	Not all recycled plastics are enable	Recycling (material)	Circular Economy	Secondary raw Material	
F462531								77						
F462529	Amcor Flexibles EMEA			Multi-r	Multi-layer articles and multi-material multi-layer ar			78	In many Member States, there is no requirement for a "Declaration of C	DoC		**Economic**	Functioning of the internal market	
F462529	Amcor Flexibles EMEA			Multi-r	Multi-layer articles and multi-material multi-layer ar			78	Help for the Circular Economy. Regulation (EC) No 282/2008 should be		Recycling (authorization)	**Economic**	Regulatory Burden	
F462529	Amcor Flexibles EMEA			Multi-r	Multi-layer articles and multi-material multi-layer ar			78	Where these issues prove impossible to overcome for mechanical recycl		functional Barrier	**Economic**	Regulatory Burden	
F462529	Amcor Flexibles EMEA			Multi-r	Multi-layer articles and multi-material multi-layer ar			78	Where these issues prove impossible to overcome for mechanical recycl		functional Barrier	**Economic**	Regulatory Burden	
F462528	null							79						
F462527								80						
F462526	FoodDrinkEurope				Annex			81	Demonstrating compliance requires extensive expertise on various fields such as knowledge of the ma			**Economic**	Compliance cost	
F462525								82						
F462523	Comite Europeen des Entreprises Vins - CEEV							83						
F462522	Tata Steel Europe			Metals Manufacture of Packaging Steel				84						
F462521	Breast Cancer UK							85						
F462518								86						
F462516				Ceram art de la table, assiettes, verres, bols et objets dÉc				87						
F462515	Evonik Industries AG			Waxes				88						
F462513	Ecologistas en AcciÛn							89						
F462510				Printing inks	Column FY	Are†you aware of any contrad		90	Gaps: the legislation fails to regulate	Concerns about legacy substances	recycling (input)	**Circular Economy**	Waste	
F462508				Plastics				91						
F462505	KEPKA - Consumers' Protection Center							92						
F462504								93						
F462503	Fidra				Annex			94	The current EU FCM legislation does	not address the environment, this i	Environment	**Environment**	Environment	
F462503	Fidra				Annex			94	The current legislation places undue	emphasis on 'intended use' of a foc	Intended use	**Circular Economy**	Production and consumption	
F462502								95						
F462501								96						
F462500	Assogastecnici is the Italian Association of Industrial, Food and Medical Gases Manufacturers. It is a sector as							97						
F462499	Gesamtverband der Aluminiumindustrie e. V. (GDA)							98						
F462498	Verband der deutschen Lack- und Druckfarbenindustrie e.V. (VdL)							99						
F462497	Argile Bretagne							100						
F462496					Column FY			101	one gap is the lack of testing metho	lack of testing method	Migration data and risk assesn	**Social**	Public health & safety and health systems	
F462496					Column FY			101	Another gap is the consideration of th	mixture toxicity of the overall mig	Migration data and risk assesn	**Social**	Public health & safety and health systems	
F462495	Independent Retail Europe				Column GA	Are†you are aware of any con		102	There is a contradiction between the	legislation on Food Contact Materi	Interconnection; waste	**Circular Economy**	Compliance costs	

F462494	CITPA		Column DU Have†you or a business you r	103	For paper & board there is no specific EU legislation, but there are numl	Non-harmonized	**Economic**	Functioning of the internal market
F462493	ForbrugerrÅdet TÊnk			104				
F462492	Henkel AG & Co KGaA	Adhesives		105				
F462491		Multi-material multi-layer articles (please specify)		106				
F462490	Swedish Society for Nature Conservation (SSNC)		Annex	107	The different parts of the FCM legislation should be consistent, with reg	Interconnection: REACH		
F462490	Swedish Society for Nature Conservation (SSNC)		Annex	107	The FCM legislation should be automatically updated when substances	become subject for regulation in	other parts of EU chemical legislation, i.e. REACH, CLP, POPs, etc. For exam	
F462489	Normpack	Others new mat	Column GA Are†you are aware of any con	108	contradictions: requirements for increased recycling versus safety	F462496		
F462486				109				
F462485		Printing inks		110				
F462483		Varnishes and coatings		111				
F462482		Multi-material multi-layer articles (please specify)		112				
F462481		Ceramics		113				
F462480		Multi-r plastic/pa	Column DU Have†you or a business you r	114	countries, who have national specific rules, e.g. Italy, create additional	Non-harmonized	**Economic**	Compliance costs
F462478			Column FY	115	In the absence of common EU FCM legislation for example for paper ar	Non-harmonized	**Economic**	Compliance costs
F462477				116				
F462473		Others Pulp	Column DU Have†you or a business you r	117	In the absence of common requirements it takes a lot of time to unders	Non-harmonized	**Economic**	Compliance costs
F462473		Others Pulp	Column CL If you wish to add further infor	118	"I would like to see more detailed Information, how to recycle the different packaging materials. A ge		**Circular Economy**	Production and Consumption
F462472				119				
F462471			Column FY	120	New materials are not taken up in th New materials are not taken up in	**New materials**	**Economic**	Innovation and research
F462468	Union Nationale des MÊtiers d'Art (UNMA) de France			121				
F462462	inDUfed			122				
F462459	IMA-Europe	Others Supplier of mineral substances used in FCM (plastic		123				
F462458	Ateliers d'Art de France (AAF)			124				
F462455			Column FY	125	EU legislation provides a solid base fo Lack of doc requirements	DoC	**Economic**	Information and Communication technologies
F462454		Printing inks		126				
F462450	Flexible Packaging Europe			127	"SML are not covering cocktail effect. Overconservatism in testing condit	Migration data and risk assesn	**Economic**	Regulatory Burden
F462450	Flexible Packaging Europe		Annex	127	In many Member States, there is no requirement for "Declarations of Co	DoC	**Economic**	Functioning of the internal market
F462450	Flexible Packaging Europe		Annex	127	Where these issues prove impossible to overcome for mechanical recycl	recycling (use)	**Economic**	Regulatory Burden
F462450	Flexible Packaging Europe		Annex	127	In particular for the functional barrier option, it is pretty clear that the cu	Functional Barrier	**Economic**	Regulatory Burden
F462450	Flexible Packaging Europe		Annex	127	Alternative provisions based on challenge testing could be explored but	should consider this would not	be a test on the recyclate	by itself. A more general requirement based on den
F462448				128				
F462447	Glass Alliance Europe aisbl			129				
F462446		Others N/A		130				
F462445				131				
F462442			Column FY	132	Gaps: the legislation fails to regulate Concerns about legacy substances	Recycling (material)	**Social**	Public health & safety and health systems
F462441	null			133				
F462440	BEUC ñ The European Consumer Organisation		Annex	134	Lack of precautionary approach: Establish a precautionary approach. Su	Interconnection: REACH	**Society**	Public health & safety and health systems
F462440	BEUC ñ The European Consumer Organisation		Annex	134	Existing EU rules on plastic materials5 meanwhile focus almost exclusiv	information		
F462439				135				
F462437		Varnishes and coatings		136				
F462434	Handelsverband Deutschland (HDE)			137				
F462431	German Masterbatch Association c/o Verband der	Mineralfarbenind	Annex	138	But there is no harmonized list for all substances which can be used in plastic food packaging applicat		**Economic**	Regulatory burdens pressure
F462431	German Masterbatch Association c/o Verband der	Mineralfarbenind	Annex	138	"Declarations of Compliance" for non- harmonized materials are not req	DoC	**Economic**	Regulatory burdens pressure
F462431	German Masterbatch Association c/o Verband der	Mineralfarbenind	Annex	138	There is no guidance how the masterbatch industry should ensure that	FCMs meet the requirements o	**Economic**	Regulatory burdens pressure
F462431	German Masterbatch Association c/o Verband der	Mineralfarbenind	Annex	138	The current system allows determining the safety of all FCMs to manag	Non-harmonzation	**Economic**	Functioning of the regulatory market
F462429		Multi-li Lamineritud	kilematerjalid	139				
F462427	Dutch Ministry of Health, Welfare and Sport			140				
F462424				141				
F462422		Multi-r e.g. foils	Column FY Are†you aware of any contrad	142				
F462402				143				
F462397		regional germar	Annex	144	new materials like Wood, Rice husks or bees wax are not in any form n	New material	**Economic**	Regulatory Burden
F462395	EuroCommerce		Column GA Are†you are aware of any con	145	It is also important that the rules on recycled plastics do not contradict t	statement		
F462395	EuroCommerce		Column DU Have†you or a business you r	145	Not problems as such but the procedure when putting non-harmonised	authorization	**Economic**	Compliance costs
F462395	EuroCommerce		Annex	145	Lack of harmonised implementation throughout the EU: In spite of EU r	Non-harmonization	**Economic**	Functioning of the Internal Market
F462395	EuroCommerce		Annex	145	The experience from our members tends to show that consumers do un	Labelling	**Social**	Public health and safety
F462395	EuroCommerce		Annex	145	When it comes to the substitution of plastic material, there is a lack of c	New material	**Economic**	Regulatory Burden
F462393	FCD Fédération du Commerce et de la Distribution	Multi-material n	Column FY Are†you aware of any contrad	146	unsufficient knowledge about FCM rules etc. especially for smaller busir	knowledge	**Social**	Education, traning and skills
F462393	FCD Fédération du Commerce et de la Distribution	Multi-material n	Annex	146	Many unofficial analytical methods exist today. In addition, not all labor	testing	**Economic**	Compliance costs
F462393	FCD Fédération du Commerce et de la Distribution	Multi-material n	Annex	146	Lack of translating guidance into the different languages of use.	translate	**Economic**	Compliance costs
F462391		Multi-r Film combination of PE and PP. Laminates from PET		147				
F462389		Silicones		148				
F462388		Ceramics		149				
F462385				150				
F462384				151				
F462381	null			152				
F462380	APEAL - The Association of European Producers of	Steel for Packaging		153				
F462379	IKEA	Wood	Annex	154				
F462377				155				
F462374	national competent authority		Annex	156	Furthermore, labelling should help us Labels for proper use or intended	Intended use	**Social**	Public health & safety and health systems
F462374	national competent authority		Annex	156	"foreseeable use" is not sufficiently d Foreseeable use is not properly de	Forseeable use	**Economic**	Compliance costs
F462374	national competent authority		Annex	156	Currently, hygienic requirements are The instruction for clean and appr	Intended use	**Social**	Public health & safety and health systems
F462374	national competent authority		Annex	156	Additionally, the scope of article 3 ref The scope of article 3 is not sufficiently clear		**Economic**	Regulatory Burden
F462373	International Chemical Secretariat (ChemSec)		Annex	157	The presence of substances that are already restricted in the EU, and th	Interconnection: REACH	**Social**	Public health & safety and health systems
F462372	Mette Holm and Charlotte Legind, Danish Veterinary and Food Administration			158				
F462365		Multi-r Erinevatest plastidest laminaadid, foolium-plast/pal		159				
F462363		Multi-li Laminates of plastic layers inteded for FCM		160				
F462356	Flint Group Sweden AB	Varnishes and coatings		161				
F462354		Wood		162				
F462353	Eurocolour e.V.		Annex	163	However, the internal market is currently negatively affected by the fac	Non-harmonization	**Economic**	Functioning of the Internal Market
F462352	INEOS Olefins and Polymers	Plastics	Column FY	164	The current EU FCM framework does Concerns about safety	Migration data and risk assesn	**Social**	Public health & safety and health systems
F462352	INEOS Olefins and Polymers	Plastics	Annex	164	Regulation 282/2008 rules food contz The non-authorization creates a hi	Recycling (authorization)	**Economic**	Regulatory Burden
F462352	INEOS Olefins and Polymers	Plastics	Annex	164	Considering the above, we believe th There is not enough guidance for	GMP	**Economic**	Regulatory Burden
F462352	INEOS Olefins and Polymers	Plastics	Annex	164	No provisions exist in the current legi Chemical recycling is not addresse	Recycling (chemical)	**Economic**	Innovation and research
F462352	INEOS Olefins and Polymers	Plastics	Annex	164	We believe that more guidance shou There are no harmonized rules for	Risk assesment	**Economic**	Regulatory Burden
F462351				165				
F462348	Federation of German Consumer Organisations (Verbraucherzentra		Column FY	166	Bio-based materials, colourants Bio-based materials, colourants ar	Bio-based	**Economic**	Regulatory Burden
F462345	Flint Group Packaging Inks Germany GmbH	Printing inks		167				
F462343				168				
F462342	Paragon Inks (Holding) Ltd	Varnishes and coatings		169				
F462341	null		Column FY	170	Lack of specific measure for i.e. multimaterials involving paper and boa	Multimaterial	**Economic**	Regulatory Burden
F462339	SEPANSO			171				
F462337		Multi-material multi-layer articles (please specify)		172				
F462336	null			173				
F462330	Dr. Thomas Gude - Swiss Quality Testir Control /	Others wir analysieren und bewerten alle Arten von FCM		174	Allerdings wie insbesondere die Zeile des Artikel 3 zu erreichen sind, bec	safety	**Economic**	Regulatory Burden
F462330	Dr. Thomas Gude - Swiss Quality Testir Control /	Others wir analysieren und bewerten alle Arten von FCM		174	Die momentane Gedanke, wenn man weiss, was man zur Herstellung b	safety		
F462330	Dr. Thomas Gude - Swiss Quality Testir Control /	Others wir analysieren und bewerten alle Arten von FCM		174	Es ist offensichtlich, dass das bestehende System der Konformitätserklä	DoC	**Economic**	
F462329				175				
F462328				176				
F462323		Regen f		177				
F462322				178				
F462312	St-tnÎ zdravotnÎ ˇstav, NRL pro materi-ly urˇenÊ pro styk s potravinami			179				
F462311	AFEI - Association FranÂaise des Encres d'Imprimerie			180				
F462308	null			181				
F462307		Paper and board		182				
F462305				183				
F462303	I&P Europe - Imaging and Printing Association e.V.			184				
F462300				185				
F462292	Feica		Annex	186	In the case of non-evaluated substances, industry is conducting risk sell	Risk assesment	**Economic**	Regulatory Burden
F462291				187				
F462289	European Federation of Corrugated Board Manufa	Paper and Boar	Annex	188	Internal market – the functioning of the internal market should be furth	Enforcement	**Economic**	Functioning of the Internal Market
F462289	European Federation of Corrugated Board Manufa	Paper and Boar	Annex	188	It was probably justified when the rule was established to ensure that	measures will be drawn as needed. However, the existence of different national rules now leads to different "		
F462289	European Federation of Corrugated Board Manufa	Paper and Boar	Annex	188	Controls and enforcement – the conti There is a lack fo controls and enf	Enforcement	**Economic**	Public authorities
F462289	European Federation of Corrugated Board Manufa	Paper and Boar	Column DU Have†you or a business you r	188	For paper & board there is no specific EU legislation, but there are numl	Non-harmonized	**Economic**	Functioning of the Internal Market
F462289	European Federation of Corrugated Board Manufa	Paper and Boar	Annex	188	In the case of non-evaluated substances, industry is conducting risk sell	Risk assesment	**Economic**	Regulatory Burden
F462286				189				
F462285				190				
F462281				191				
F462280				192				
F462279				193				
F462277				194				
F462274	Hellenic Food Authority			195				
F462265				196				
F462264				197				
F462262				198				
F462261		Varnishes and coatings		199				
F462259				201				
F462258	EuPIA - European Printing Ink Association			202				
F462257				203				
F462255				204				
F462250				205				
F462241				206				
F462240		Paper and board		207				

F462239			Wood			208			
F462237	??????????? ???????? ???????? ???????					209			
F462236						210			
F462234	Deifel GmbH & Co. KG		Others Pigmente, Farbstoffe			211			
F462233						212			
F462231	The Alliance for Beverage Cartons and the Environment					213			
F462230	Verband Metallverpackungen e.V.					214			
F462228						215			
F462227	European Core and Tube Association					216			
F462226			Plastics			217			
F462222						218			
F462221	null					219			
F462220	HARRPA, Hydrocarbon Resins, Rosin Resins & Pine Chemicals Producers Association					220			
F462219						221			
F462216	null					222			
F462213						223			
F462210						224			
F462207			Regenerated cellulose			225			
F462194						226			
F462192	European Plastics Converters (EuPC)	Converter			F260602	227			
F462188						228			
F462184			Others Additives for use in above materials			229			
F462178						230			
F462171						231			
F462141			Others EXPERTISE CONSTRUCTION			232			
F462117			Plastics			233			
F462103						234			
F462094			Plastics			235			
F462092			Plastics			236			
F462091			Varnishes and coatings			237			
F462089			Plastics			238			
F462082			Plastics	Column FY		239			
F462082			Plastics	Column FY		239			
F462081			Silicones			240			
F462080			Multi-r Beverage cartons			241	1. No requirement for DoCs for non-harmonised materials nor guidance Doc	economic	Functioning of the internal market
F462080			Multi-r Beverage cartons			241	3. no incentives in bringing innovations into the market (which we need Incentives	economic	Competitiveness
F462079						242			
F462076						243			
F462075						244			
F462072			Wood			245			
F462065			Varnishes and coatings			246			
F462040			Plastics			247			
F462037						248			
F462021						249			
F462011			Plastics			250			
F462002						251			
F462001						252			
F462000						253			
F461990						254			
F461988	SAPICI		Adhesives			255			
F461986	Wirtschaftsverband Papierverarbeitung (WPV) e.V.					256			
F461984						257			
F461979						258			
F461978						259			
F461977						260			
F461935	Committee of PET Manufacturers in Europe					261			
F461920						262			
F461915			Varnishes and coatings			263			
F461906			Wood			264			
F461896						265			
F461861						266			
F461860						267			
F461827						268			
F461756						269			
F461746			Printin plastic bags with/ withoud print PE and PP			270			
F461714						271			
F461690	Ge.S.A. SPa		Multi-r tetrapack,			272			
F461674						273			
F461658						274			
F461650			Plastics			275			
F461644						276			
F461614						277			
F461605						278			
F461600						279			
F461593	null					280			
F461592						281			
F461579						282			
F461577						283			
F461573						284			
F461572						285			
F461565			Multi-li Laminated tubes			286			
F461562						287			
F461561			Waxes			288			
F461548						289			
F461533						290			
F461517						291			
F461512						292			
F461508						293			
F461506	null					294			
F461505						295			
F461503						296			
F461502						297			
F461501						298			
F461492						299			
F461489						300			
F461478						301			
F461476						302			
F461471						303			
F461464			Varnishes and coatings			304			
F461461			Plastics			305			
F461403						306			
F461381			Others Mineral			307			
F461377			Multi-material multi-layer articles (please specify)			308			
F432751						309			
F432750						310			
F411840						311			
F411839			Multi-r complexe synthÉtique, complexe papier/synthÉtiqu			312			
F411838						313			
F408558						314			
F388368						315			
F387159			Others Additives			316			
F314129						317			
F312953						318			
F292695	Federation de la Brosserie					319			
F290294						320			
F290293			Printing inks			321			
F288559			Glass	Column Fy		322	* FCM business operators are not obl There are no labelling obligations	Economic	Functioning of the Internal Market
F283697						323			
F283023						324			
F282044						325			
F280081						326			
F279695			Wood			327			
F268784						328			
F260925						329			
F260778						330			
F260775						331			
F260768						332			
F260744						333			
F260738			Multi-r Multi Layer and Multi Material baseweb and lidding			334			
F260736	deSter BVBA		Printing inks			335			
F260733	rkw rÉmy sas		Plastic Films plastiques			336			
F260723						337			

F260627							338				
F260626							339				
F260625				Multi-r	coating on metals, coating on paper and textile		340				
F260607							341				
F260606	Mitsubishi Polyester Film GmbH			Plastics			342				
F260605				Multi-li	Zb.: Tetrapak		343				
F260604							345				
F260603							346				
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	Column GL	If you wish to add further infor	347	Food contact materials (and legislatic	There is a lack of knowledge and	Knowledge and skills	**Economic**	Information and Communication technologies
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	Column GL	If you wish to add further infor	347	Food contact materials (and legislatic	There is a lack of enforcement by	enforcement	**Economic**	Public authorities
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	Annex		347	Risk assessment is often a joint effor	Lack of guidelines	Risk assesment	**Economic**	regulatory Burden
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	Annex		347	"Declarations of Compliance" for non-harmonized materials are not eve		Doc	**Economic**	regulatory Burden
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	Annex		347	gap between the scientific options to demonstrate something is safe an		safety	**Economic**	Regulatory burdens pressure
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	Annex		347	The existing EU regulatory system, notably for plastics, has become ver		Frameowrk	**Economic**	Regulatory Burden
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	Annex		347	Business operators in the FCM supply	There is uncertainty whether or nc	New materials	**Economic**	Regulatory Burden
							347	At the same time, bringing new mate	The framework is slow and unpre	New materials	**Economic**	Regulatory Burden
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	with customers that have a broad range of		347	There is no guidance as to how industry ensures that FCM meet the req	At the same time, bringing ne	The framework is slow ar	New materials	
											Economic	Compliance costs
F260602	The Plastics Coordination Group (PCG)	Business & Think Thank	Multi-r	we deal	with customers that have a broad range of		347	The risk assessments currently made by industry lie hidden in Supportin		DoC		
F260601							348					
F260600	null						350					
F260599				Waxes			351					
F260598							352					
F260597							353					
F260596							354					
F260595							355					
F260594				Multi-r	PETG/PS/PETGPrint/Lacquer/Al foil/adhesive/Paper/		356					
F260562				Paper and board			357					
F260561				Plastics			358					
F260560				Multi-r	Papier-plastique		359					
F260559				Plastic	Food & Food raw materials		360					
F260558				Plastics			361					
F260557							362					
F260556							363					
F260555							364					
F260554							365					
F260553							366					
F260552							367					
F260444				Wood			368					
F260443	Amt f„r Verbraucherschutz, Kanton Aargau, Schweiz						369					
F260442				Varnis	Pigment-Pr‰parationen als Vorprodukte		370					
F260441							371					
F260440							372					
F260439	null						373					
F260438				Multi-r	PET PE PP PS		374					
F260437							375					
F260436	null						376					
F176838							377					
F111053							378					
F89363							379					
F89330							380					
F89326					Column FY		381	Post consumer recycled plastic mater	No labelling incentives using recyc	Labelling	**Circular Economy**	Production and consumption
F83980							382					
F82187							383					
F76329	Danish Brewers' Association				Annex		384	Today plastic FCM with post consumer recycled plastic material from a r		Labelling	**Circular Economy**	Production and consumption
F76329	Danish Brewers' Association				Column GA	Are†you are aware of any con	384	2) The Drinking Water Directive (recast) will have a complete duplicatio		Interconnection; DWD	**Economic**	Regulatory Burden
F76329	Danish Brewers' Association				Column GA	Are†you are aware of any con	384	In order to increase legal certainty and transparency there is a need for		Instrument	**Economic**	Regulatory Burden
F76329	Danish Brewers' Association				Column GA	Are†you are aware of any con	384	A DoC is required only for those materials that are covered by specific E		DoC	**Economic**	Regulatory Burden
F68910							385					
F66807							386					
F65533							387					
F65521							388					
F65484							389					
F65483							390					
F65482							391					
F65481							392					
F65480							393					
F65479				Multi-r	Verbundfolie, bestehend aus Heisssiegellack, Alumir		394					
F65478							395					
F65477	null						396					
F65476							397					
F65447							398					
F65446	Valstybin? maisto ir veterinarijos tarnyba						399					
F65445				Adhesi	Polyurethane binders to cork aglomeration		400					
F65444							401					
F65443	Wipf AG			Multi-material multi-layer articles (please specify)			402					
F65442				Multi-r	E.g. Wood/adhesive/lacquer, metal/non-stick coati		403					
F65441	ERIKS NV			Multi-r	metal caoutchouc ou plastique caoutchouc		404					
F65440							405					
F65439	null						406					
F65438							407					
F65437							408					
F65436							409					
F65435							410					
F65434							411					
F65433							412					
F65432				Multi-li	e.g. Plas	Column GL	If you wish to add further infor	413	Business needs clear legal and scienti	Rules on the safe use of recycled in FCM are not sufficient		**Circular Economy**	Secondary Raw Materials
F64279				Multi-r	Textile fibers with Rubber coattings			414					
F51310								415					
F50755								416					
F49994								417					
F39213								418					
F38935								419					
F26551								420					
F26550								421					
F26384								422					
F26383								423					
F26174				Printing inks				424					
F26169				Wood		Column DU	Have†you or a business you r	425	Concerns about the safety of imported products			**Economic**	Third and developing countries
F26168								426					
F26149								427					
F26142								428					
F26126								429					
F26119								430					
F26116	null							431					
F26115								432					
F26113								433					
F26110								434					
F26104								435					
F26102				Others	bagasse / bamboo / palm leaf / coated board / pla			436					
F26101								437					
F26100								438					
F26096								439					
F26095								440					

F26093		441
F26092		442
F26090		443
F26089	null	444
F26088		445
F26084		446
F26083		447
F26082		448
F26079		449
F26078		450
F26077		451

Annex 2 Results Consultation FCM Inception Impact Assesment

Selection criterea: material (paper, plastic, multilayer), mentioning circular economy, recycling, reuse. Statements about problems already mentioned in the IA are left out

	FCM Number	Contributor	Actor in supply Chain	Material	Source	Relevant	Comment	Reference Numb	Literal statement	Summary / interpretation	Category	Indicator	Subindicator
1	F1494974	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No							
2	F1494973	Hände	Company	Ceramic	https://ec.europa.eu/inl	No							
3	F1494971	Vincent Denoual - Céramiste	Company	Ceramic	https://ec.europa.eu/inl	No							
4	F1494970	ClientEarth	NGO	not relevant	https://ec.europa.eu/inl	No	Attachment not there						
5	F1494969	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No							
6	F1494968	Anonym	Citizen / Consumer	not relevant	https://ec.europa.eu/inl	No							
7	F1494967	Charline Meyer Céramique	Company	Ceramic	https://ec.europa.eu/inl	No							
8	F1494966	Atelier Darbroche	Company	Wood	https://ec.europa.eu/inl	No							
9	F1494965	Pascal Oudet	Company	Wood	https://ec.europa.eu/inl	No							
10	F1494386	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No							
11	F1494323	ArcelorMittal Europe	Company	Steel and Mine	https://ec.europa.eu/inl	No							
12	F1494187	Atelier Terre d'Empreintes	Company	Ceramic	https://ec.europa.eu/inl	No							
13	F1494061	Anonym	Company	Wood	https://ec.europa.eu/inl	No							
14	F1493976	Fundación Alborada	NGO	not relevant	https://ec.europa.eu/inl	Yes	Spanish Contribu	1	Do not use recycled materials	Concerns over presence of unwanted substances	Hazardous substances	**Social**	Public health & safety and health systems
14	F1493976	Fundación Alborada	NGO	not relevant	https://ec.europa.eu/inl	Yes	Spanish Contribu	1	The presence and migration o	Migration assesment does not take into account	Migration data and assesment	**Social**	Public health & safety and health systems
14	F1493976	Fundación Alborada	NGO	not relevant	https://ec.europa.eu/inl	Maybe	Spanish Contribu	1	The presence and migration o	Reliable data on migration can be absent	Migration data and assesment	**Social**	Public health & safety and health systems
15	F1493712	Plastics Industry Association	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		2	Although substances used in F	lack of clarity or methods such as risk assessmen	Safety compliance	**Economic**	Regulatory burdens
15	F1493712	Plastics Industry Association	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		2	Although substances used in F	SME lack the resources to develop robust metho	Resources	**Economic**	Operation conduct of SME's
15	F1493712	Plastics Industry Association	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		2	Further, uniform risk assessm	Insufficient reliable and qualtiy communications	Supply chain communication	**Economic**	Information and Communication technologies
16	F1493164	atelier céramique	Company	Ceramic	https://ec.europa.eu/inl	No							
17	F1493061	Auto-entrepreneur	Company	Wood	https://ec.europa.eu/inl	No							
18	F1492733	Lauriane Firoben	Company	Ceramic	https://ec.europa.eu/inl	No							
19	F1491694	Atelier d'art de france	Company	not relevant	https://ec.europa.eu/inl	No							
20	F1490856	Anonym	Citizen / Consumer	not relevant	https://ec.europa.eu/inl	No							
21	F1490854	atelier céramique	Company	Ceramic	https://ec.europa.eu/inl	No							
22	F1490853	DGCCRF - Minsitry of finance an	Government	not relevant	https://ec.europa.eu/inl	Yes	French contribut	3	France wishes that, for resins	Requirements and purity and other evaluation c	Recycling (authorization)	**Economic**	Regulatory burdens
22	F1490853	DGCCRF - Minsitry of finance an	Government	not relevant	https://ec.europa.eu/inl	Yes	French contribut	3	However, this strategy require	The concept of "essential use" is unclear	Essential use	**Economic**	Regulatory burdens
22	F1490853	DGCCRF - Minsitry of finance an	Government	not relevant	https://ec.europa.eu/inl	Yes	French contribut	3	With a view to improving con	the generic detection limit of 10 ppb is not prote	Migration data and assesment	**Social**	Public health & safety and health systems
22	F1490853	DGCCRF - Minsitry of finance an	Government	not relevant	https://ec.europa.eu/inl	Yes	French contribut	3	Finally, the French authorities	The absence of DoC for all materials has an impa	Decleration of compliance	**Economic**	Public authorities & Functioning of the internal market and competition
22	F1490853	DGCCRF - Minsitry of finance an	Government	not relevant	https://ec.europa.eu/inl	Yes	French contribut	3	Concerning recycled plastics and, in connection with the development of recycli		Guidance document	**Economic**	Public authorities & Functioning of the internal market and competition
23	F1490810	Poterie Marie-Claire	Company	Ceramic	https://ec.europa.eu/inl	No							
24	F1490277	AFTAB	Company	Wood	https://ec.europa.eu/inl	No							
25	F1489914	Terre à Côté	Company	Ceramic	https://ec.europa.eu/inl	No							
26	F1489912	Anonym	Company	Céramiste	https://ec.europa.eu/inl	No							
27	F1489601	APPLiA - Home Appliance Europe	Final product	Home appliances	https://ec.europa.eu/inl	Maybe		4	Hence, at this point, we would	different (custom) rules in a specific area, it will	Mutual recognition	**Economic**	Functioning of the internal market and competition & Compliance costs
27	F1489601	APPLiA - Home Appliance Europe	Final product	Home appliances	https://ec.europa.eu/inl	Maybe		4	To further support goals on sustainability, the Commission would expand rules		Sustaiability	**Environment**	Environment
28	F1489597	Anonym	Brancheverenigin	not relevant	https://ec.europa.eu/inl	No							
29	F1489594	Plastics Recyclers Europe	Recycler	Plastic	https://ec.europa.eu/inl	Yes		5	The variety of national legisla	Different national rules lead to: administrative a	Non-harmonization	**Economic**	Functioning of the internal market and competition & Compliance costs
29	F1489594	Plastics Recyclers Europe	Recycler	Plastic	https://ec.europa.eu/inl	Yes		5	In addition, complex and lengt	Rules on testing NIAS and method for risk assess	NIAS	**Economic**	Regulatory burdens
29	F1489594	Plastics Recyclers Europe	Recycler	Plastic	https://ec.europa.eu/inl	Yes		5	In this regard, focus should be	Declaration of Compliance is not effective. Not e	Decleration of compliance	**Economic**	Information and Communication technologies
30	F1489593	TINE SA	Company	Unkown	https://ec.europa.eu/inl	No							
31	F1489590	International Carbon Black Assoc	NGO		https://ec.europa.eu/inl	No							
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	Focusing on final articles may	Not all hazardous substance migrate form polym	Precautionary principle	**Social**	Public health & safety and health systems & Governance and good administration
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	Regarding sustainability, we v	Chemical recycling is currently not addressed	Recycling (authorization)	**Economic**	Regulatory burdens
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	Regarding sustainability, we v	How to recycle other resins that PET are currentl	Recycling (authorization)	**Economic**	Regulatory burdens
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	Enforcement of rules on FCMs	Insufficient enforcement represents causes false	Enforcement	**Economic**	Operation conduct of SME's
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	We support more guidance to	Not enough guidance to address the risks both fr	Risk assesment	**Social**	Public health & safety and health systems
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	As for example, recycling of p	There needs to be guidance how to safely reach t	Ratio of SRM/PRM	**Economic**	Regulatory burdens
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	There is an urgent need to det	Not all processes with positive safety opinion fro	Recycling (authorization)	**Economic**	Regulatory burdens
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	Clear recognition is also need	legal unclarity over status of recycled resins prod	Recycling (Chemical)	**Economic**	Regulatory burdens
32	F1489513	Elipso	Packager	Plastic	https://ec.europa.eu/inl	Yes		6	The content of the DoCs shoul	The content of the DoCs from the raw material s	Decleration of compliance	**Economic**	Information and Communication technologies
33	F1489479	Corinne durr entreprise individue	Company	Ceramic	https://ec.europa.eu/inl	No							
34	F1489396	SMEunited	Brancheverenigin	not relevant	https://ec.europa.eu/inl	No							
35	F1489263	Artiste et Décoratrice	Company	Ceramic	https://ec.europa.eu/inl	No							
36	F1488157	INOVYN	Innovyn	Plastic (PVC)	https://ec.europa.eu/inl	Maybe		7	We note however that the pro	Regulation 1935/2004 is based on the rise of a	Safety	**Social**	Public health & safety and health systems & Governance and good administration
36	F1488157	INOVYN	Innovyn	Plastic (PVC)	https://ec.europa.eu/inl	Yes		7	We agree that there is not a "	In the absence of harmonized rules there are oth	Non-harmonization	**Economic**	Functioning of the internal market and competition & Compliance costs
36	F1488157	INOVYN	Innovyn	Plastic (PVC)	https://ec.europa.eu/inl	Yes		7	The clear identification of haz	The REACH regulation can use the indentification	Safety	**Social**	Public health & safety and health systems & Governance and good administration
36	F1488157	INOVYN	Innovyn	Plastic (PVC)	https://ec.europa.eu/inl	Yes		7	A clear definition of sustainab	Advanced (chemical) recycling technologies now	Recycling (authorization)	**Economic**	Regulatory burdens
36	F1488157	INOVYN	Innovyn	Plastic (PVC)	https://ec.europa.eu/inl	Yes		7	We agree that safety rules for	A full life cycle assessment is needed to see if b	Life Cycle	**Circular Economy**	Secondary Raw Materials
37	F1487959	Kay O'Brien	Company	Ceramic	https://ec.europa.eu/inl	No							
38	F1487948	Karsten Hötzer	Science	not relevant	https://ec.europa.eu/inl	Maybe		8	My experience from the contr	SMEs can have poor knowledge about FCM legis	Compliance	**Economic**	Operation conduct of SME's
38	F1487948	Karsten Hötzer	Science	not relevant	https://ec.europa.eu/inl	Maybe		8	The insufficient development	Insufficient development of workable rules and n	Non-harmonization	**Economic**	Compliance costs
39	F1487915	OceanCare	NGO	not relevant	https://ec.europa.eu/inl	Maybe		9	Caution about bio-based mate	Concerns about bio-based materials	Bio-based	**Social**	Public health & safety and health systems
39	F1487915	OceanCare	NGO	not relevant	https://ec.europa.eu/inl	Maybe		9	Contaminants in recycling (...)	Concerns about materials from chemical recyclin	Recycling (chemical)	**Social**	Public health & safety and health systems
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	In the plastics sector of FCMs	The existence of harmonized rules at the EU leve	Non-harmonization	**Economic**	Functioning of the internal market and competition
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	In the plastics sector of FCMs	The proper functioning of the mutual recognition	Mutual Recognition	**Economic**	Functioning of the internal market and competition
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	In the plastics sector of FCMs	An EU repository for translated national legislatio	Non-harmonization	**Economic**	Functioning of the internal market and competition
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	Lack of harmonized rules does	Differences among Member States exist in the in	Non-harmonization	**Social**	Public health & safety and health systems
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	Positive lists only cover startin	Many substances may potentially migrate into fo	Risk assesment	**Economic**	Compliance costs
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	Although it is true that a limit	a limited number of substances are backed up by	Compliance	**Economic**	Innovation and research
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	Regarding sustainability, we v	The use of recycling in the context of FCM is limi	Recycling	**Economic**	Regulatory burdens
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	Initiatives to promote reuse a	Guidance on how to perform safety evaluation of	Ratio of SRM/PRM	**Economic**	Regulatory burdens
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	For example, at present, EFSA	EFSA has only published criteria for the safety as	Recycling (authorization)	**Economic**	Regulatory burdens
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	For example, at present, EFSA	The criterea used in the safety assessment of me	Recycling (authorization)	**Economic**	Regulatory burdens
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	Polyolefins in particular are no	Polyolefins in particular are not readily amenable	Recycling (authorization)	**Economic**	Regulatory burdens
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	Polyolefins in particular are no	The challenge test is based on data which uses a	Recycling (authorization)	**Economic**	Regulatory burdens
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	Plastics converters need not o	The content of the DoCs does not contian sufficie	Decleration of compliance	**Economic**	Information and Communication technologies
40	F1487544	The British Plastics Federation	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		10	The fact is that the EU legislation on FCM is complex and is only understood by		Instrument	**Economic**	Regulatory burdens
41	F1487542	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No							
42	F1487541	EEA - European Enamel Associat	Company	Porcelain	https://ec.europa.eu/inl	No							
43	F1487539	CNA - Confederazione nazionale	Company	not relevant	https://ec.europa.eu/inl	No							
44	F1487538	ETRMA - European Tyre & Rubbe	Brancheverenigin	Rubber	https://ec.europa.eu/inl	No							
45	F1487537	POTERIE PARABIS	Company	Ceramic	https://ec.europa.eu/inl	No							
46	F1487535	APEAL - the Association of Europ	Company	Steel and Mine	https://ec.europa.eu/inl	No							
47	F1487531	Euro Coop	Brancheverenigin	not relevant	https://ec.europa.eu/inl	No							
48	F1487530	Danish Agriculture & Food Coun	Government	not relevant	https://ec.europa.eu/inl	Yes			We welcome that the roadmap rightly acknowledges that FCM legislation does x				
48	F1487530	Danish Agriculture & Food Coun	Government	not relevant	https://ec.europa.eu/inl	Yes		11	The food industry needs a sup	There is a limited availability of recycled materia	SRM availability	**Circular Economy**	Secondary Raw Materials
48	F1487530	Danish Agriculture & Food Coun	Government	not relevant	https://ec.europa.eu/inl	Yes		11	There is an urgent need to bri	mechanical recycling which can mainly be used f	Recycling (use)	**Economic**	Innovation and research
48	F1487530	Danish Agriculture & Food Coun	Government	not relevant	https://ec.europa.eu/inl	Yes		11	Harmonized rules will make it	Non-standardized documentation impacts costs	Non-harmonization	**Economic**	Compliance costs
48	F1487530	Danish Agriculture & Food Coun	Government	not relevant	https://ec.europa.eu/inl	Yes		11	Harmonized rules will make it	Non-harmonization impact compliance	Non-harmonization	**Economic**	
48	F1487530	Danish Agriculture & Food Coun	Government	not relevant	https://ec.europa.eu/inl	Yes		11	At current, information on con	Not all information (for example) on composition	Decleration of compliance	**Economic**	Information and Communication technologies
49	F1487529	Women Engage for a Common F	NGo	not relevant	https://ec.europa.eu/inl	Maybe		12	Protection of sensitive popula	Current regulation ignores combination effects o	Risk assesment	**Social**	Public health & safety and health systems
50	F1487528	RATINAUD	Company	Ceramic	https://ec.europa.eu/inl	No							
51	F1487527	Food Packaging Forum Foundati	Science & research	not relevant	https://ec.europa.eu/inl	Yes		13	chemicals have effects at low	The concept of safety as expressed in Art 3 is not	Safety	**Social**	Public health & safety and health systems
51	F1487527	Food Packaging Forum Foundati	Science & research	not relevant	https://ec.europa.eu/inl	Yes		13	When prioritizing the assessm	chemical risk management in a circular economy	Risk assesment	**Circular Economy**	Secondary Raw Materials
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	However the use of recycled n	There is legal uncertainty for the use of recycled	Recycling (matierals)	**Economic**	Regulatory burdens
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	However the use of recycled n	Lack of appropriately evaluated and authorised re	Recling (Authorization)	**Economic**	Regulatory burdens
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	In addition, increased harmon	Harmonisation, transparency and communicatio	Communication	**Economic**	Information and Communication technologies
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	In addition, increased harmon	Resourcing for enforcement are not sufficient	Enforcement and compliance	**Economic**	Public authorities
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	In polyolefins there are many	There is no clear recognition that recycled polyole	Recycling (Chemical)	**Economic**	Regulatory burdens
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	PCEP is actively working on a s	There is no appropriate challenge test for polyole	Recycling (use)	**Economic**	Innovation and research
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	PCEP is actively working on a s	Some recycled polyolefins can only be used behir	Recycling (use)	**Circular Economy**	Secondary Raw Materials
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	These changes will ensure leg	The current legislative and scientific state for usi	Recycling (use)	**Economic**	Investmet
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	Harmonised rules on risk asse	More guidance to address the risks both from No	Non-harmonization	**Economic**	Regulatory pressure
52	F1487463	Polyolefin Circular Economy Platf	Brancheverenigin	Plastic	https://ec.europa.eu/inl	Yes		14	As noted in the Inception Imp	Enforcement is needed to create a level playing	Import	**Economic**	Trade and investment flow
53	F1487196	Les Céramiques de Juliette	Company	Ceramic	https://ec.europa.eu/inl	No							
54	F1486878	Guillaume Garès	Company	Ceramic	https://ec.europa.eu/inl	No							
55	F1486557	ChemSec	NGO	not relevant	https://ec.europa.eu/inl	No							
56	F1486556	MOL Group	Raw Material producer	Plastic	https://ec.europa.eu/inl	Yes		15	Supporting safer and more su	approval process of innovative recycling technol	Recycling (chemical)	**Economic**	Regulatory burdens
57	F1486556	MOL Group	Raw Material producer	Plastic	https://ec.europa.eu/inl	Yes		15	Supporting safer and more su	approval process of innovative recycling technol	Recycling (chemical)	**Economic**	Regulatory burdens
58	F1486554	CHEM Trust	NGO	not relevant	https://ec.europa.eu/inl	No							
59	F1486553	CES - Silicones Europe, a Sector	Brancheverenigin	Silicones	https://ec.europa.eu/inl	No							
60	F1486551	Terres brutes et subtiles	Company	Ceramic	https://ec.europa.eu/inl	No							
61	F1486546	Swedish Forest Industries Feder	Company	Wood, Paper and board	https://ec.europa.eu/inl	Yes		16	The paper and board sector ha	There is a patchwork of national measures applie	Non-harmonization	**Economic**	Functioning of the internal market
61	F1486546	Swedish Forest Industries Feder	Company	Wood, Paper and board	https://ec.europa.eu/inl	Yes		16	The paper and board sector ha	Fragmentation leads to complexity and elgal unc	Non-harmonization	**Economic**	Functioning of the internal market

62	F1486526	Anonym	Citizen / Consumer	not relevant	https://ec.europa.eu/inl	No									
63	F1486545	Vouwkarton Platform Nederland	Branchevereniging	Wood, Paper and board	https://ec.europa.eu/inl	No									
64	F1486476	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
65	F1486049	flore loireau	Company	Ceramic	https://ec.europa.eu/inl	No									
66	F1485917	SARL AUAGNE GARLABAN BARI	Branchevereniging	Ceramic	https://ec.europa.eu/inl	No									
67	F1485154	l'atelier de mathilde	Company	Ceramic	https://ec.europa.eu/inl	No									
68	F1484900	Nickel Institute	Branchevereniging	Nickel	https://ec.europa.eu/inl	No									
69	F1484897	ANEC, European consumer voice	Consumerorganization	not relevant	https://ec.europa.eu/inl	No									
70	F1484887	Anonym	Company	Wood	https://ec.europa.eu/inl	No									
71	F1484886	European Container Glass manu	Converter	Glass	https://ec.europa.eu/inl	Maybe									
72	F1484884	Rådet for Grøn Omstilling (Gree	NGO	not relevant	https://ec.europa.eu/inl	No									
73	F1484883	Atelier d'art de france	Company	not relevant	https://ec.europa.eu/inl	No									
74	F1484881	Zero Waste Europe	NGO	not relevant	https://ec.europa.eu/inl	No									
74	F1484881	Zero Waste Europe	NGO	not relevant	https://ec.europa.eu/inl	No									
75	F1484878	Official Food Control Authority o	Government	not relevant	https://ec.europa.eu/inl	No									
76	F1484487	PepsiCo Intl Ltd	Company	not relevant	https://ec.europa.eu/inl	No									
77	F1484095	UNESDA Soft Drinks Europe	Company	not relevant	https://ec.europa.eu/inl	Yes									
77	F1484095	UNESDA Soft Drinks Europe	Company	not relevant	https://ec.europa.eu/inl	Yes									
77	F1484095	UNESDA Soft Drinks Europe	Company	not relevant	https://ec.europa.eu/inl	Yes									
78	F1484090	Magyar Kerámia Szövetség	Branchevereniging	Ceramic	https://ec.europa.eu/inl	No									
79	F1484094	NRL-FCM-CH	Government		https://ec.europa.eu/inl	No									
80	F1484083	Atelier Recycl'et Bois	Company	Wood	https://ec.europa.eu/inl	No									
81	F1483910	Herendi Porcelánmanufaktúra Zr	Company	Ceramic	https://ec.europa.eu/inl	No									
82	F1482911	AIPCE CEP	Company	not relevant	https://ec.europa.eu/inl	Maybe									
83	F1482910	Health and Environment Justice	NGO	not relevant	https://ec.europa.eu/inl	No									
84	F1482908	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
85	F1482903	Rethink Plastic alliance	NGO	Plastic	https://ec.europa.eu/inl	Yes									
86	F1482641	Flexible Packaging Europe	Converter	Plastic	https://ec.europa.eu/inl	Yes									
86	F1482641	Flexible Packaging Europe	Converter	Plastic	https://ec.europa.eu/inl	Yes									
86	F1482641	Flexible Packaging Europe	Converter	Plastic	https://ec.europa.eu/inl	Yes									
86	F1482641	Flexible Packaging Europe	Converter	Plastic	https://ec.europa.eu/inl	Yes									
86	F1482641	Flexible Packaging Europe	Converter	Plastic	https://ec.europa.eu/inl	Yes									
86	F1482641	Flexible Packaging Europe	Converter	Plastic	https://ec.europa.eu/inl	Yes									
87	F1482496	Confederation of Danish Industry	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes									
87	F1482496	Confederation of Danish Industry	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes									
87	F1482496	Confederation of Danish Industry	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes									
87	F1482496	Confederation of Danish Industry	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes									
88	F1482205	APK AG	Recyler	Plastic	https://ec.europa.eu/inl	Yes									
88	F1482205	APK AG	Recyler	Plastic	https://ec.europa.eu/inl	Yes									
89	F1480719	Center for International Environr	NGO	not relevant	https://ec.europa.eu/inl	Maybe									
90	F1480718	Plastics Industry Association	Converter	Plastic	https://ec.europa.eu/inl	Yes									
90	F1480718	Plastics Industry Association	Converter	Plastic	https://ec.europa.eu/inl	Yes									
90	F1480718	Plastics Industry Association	Converter	Plastic	https://ec.europa.eu/inl	Yes									
90	F1480718	Plastics Industry Association	Converter	Plastic	https://ec.europa.eu/inl	Yes									
90	F1480718	Plastics Industry Association	Converter	Plastic	https://ec.europa.eu/inl	Yes									
90	F1480718	Plastics Industry Association	Converter	Plastic	https://ec.europa.eu/inl	Yes									
91	F1480717	Métiers d'art	Company	Ceramic	https://ec.europa.eu/inl	No									
92	F1480716	Les Terres de Ti'ny	Company	Ceramic	https://ec.europa.eu/inl	No									
93	F1478059	Atelier de céramique	Company	Ceramic	https://ec.europa.eu/inl	No									
94	F1477689	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
95	F1477688	Poteries Daniel Chavigny	Company	Ceramic	https://ec.europa.eu/inl	No									
96	F1477687	Stora Enso	Paper	Paper and Board	https://ec.europa.eu/inl	yes									
96	F1477687	Stora Enso	Paper	Paper and Board	https://ec.europa.eu/inl	yes									
96	F1477687	Stora Enso	Paper	Paper and Board	https://ec.europa.eu/inl	yes									
96	F1477687	Stora Enso	Paper	Paper and Board	https://ec.europa.eu/inl	yes									
97	F1477686	La poterie des grands bois	Company	Ceramic	https://ec.europa.eu/inl	No									
98	F1477685	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
99	F1477579	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
100	F1477462	collectif emergence	Branchevereniging	Ceramic	https://ec.europa.eu/inl	No									
101	F1477444	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
102	F1476337	Céramique Artisan	Company	Ceramic	https://ec.europa.eu/inl	No									
103	F1475520	potiere	Company	Ceramic	https://ec.europa.eu/inl	No									
104	F1475434	Collectif National des Céramiste	Company	Ceramic	https://ec.europa.eu/inl	No									
105	F1475093	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
106	F1473279	CEPI Confederation of European	Branchevereniging	Paper and Board	https://ec.europa.eu/inl	Yes									
106	F1473279	CEPI Confederation of European	Branchevereniging	Paper and Board	https://ec.europa.eu/inl	Yes									
106	F1473279	CEPI Confederation of European	Branchevereniging	Paper and Board	https://ec.europa.eu/inl	Yes									
107	F1473278	l'atelier de leandre	Company	Ceramic	https://ec.europa.eu/inl	No									
108	F1473277	Didier LE HEN	Citizen/consumer	not relevant	https://ec.europa.eu/inl	No									
109	F1473248	Food Contact Additives (FCA), a	Sector Group of the European Cher	Additives	https://ec.europa.eu/inl	Maybe									
110	F1473195	Anonym	Citizen/consumer	Ceramic	https://ec.europa.eu/inl	No									
111	F1473194	EMILIE BRICHARD	Company	Ceramic	https://ec.europa.eu/inl	No									
112	F1473193	TNSO	Company	Ceramic	https://ec.europa.eu/inl	No									
113	F1473192	les bois de la passion	Company	Wood	https://ec.europa.eu/inl	No									
114	F1473191	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
115	F1473189	Terre d'Etoile	Company	Ceramic	https://ec.europa.eu/inl	No									
116	F1473188	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
117	F1473179	Céramiste professionnelle	Company	Ceramic	https://ec.europa.eu/inl	No									
118	F1473181	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No									
119	F1473183	GIFASP - Gruppo Italiano Fabbri	Branchevereniging	Carton	https://ec.europa.eu/inl	No	Comments of EC	30	ECMA is strongly in favour of h	Non-harmonization creates operational uncertain	Non-harmonized	**Economic**	Operation conduct of SME's
119	F1473183	GIFASP - Gruppo Italiano Fabbri	Branchevereniging	Carton	https://ec.europa.eu/inl	No	Comments of EC	30	ECMA is strongly in favour of h	Non-harmonization impacts costs for compliance	Non-harmonized	**Economic**	Compliance costs
119	F1473183	GIFASP - Gruppo Italiano Fabbri	Branchevereniging	Carton	https://ec.europa.eu/inl	No	Comments of EC	30	ECMA is strongly in favour of h	Compliance for SME's to the migration testing re	Non-harmonized	**Economic**	Operation conduct of SME's
120	F1473184	Normpack	Branchevereniging	not relevant	https://ec.europa.eu/inl	No									
121	F1473187	Federation of German Consume	Consumerorganization	not relevant	https://ec.europa.eu/inl	Maybe		31	Rules for recycled materials c	There are concerns about the safety of plastics ce	Recycled materials	**Social**	Public Health
122	F1473177	Spanish Cartons Makers Associa	Branchevereniging	Carton	https://ec.europa.eu/inl	Yes	Duplicate: Comm	32					
123	F1472869	Health Care Without Harm (HCW	NGO	not relevant	https://ec.europa.eu/inl	Maybe		33	Chemicals in most FCMs, such	There is a lack of technical, human, and financial	Enforcement	**Economic**	Public authorities
123	F1472869	Health Care Without Harm (HCW	NGO	not relevant	https://ec.europa.eu/inl	Maybe		33	Chemicals in most FCMs, such	There is an inconsistent enforcement of FCM rul	Enforcement	**Economic**	Functioning of the Internal Market
123	F1472869	Health Care Without Harm (HCW	NGO	not relevant	https://ec.europa.eu/inl	Maybe		33	The presence of such hazardo	Concerns about substances in recycled materials	safety	**Social**	Public Health
124	F1472417	Fefco	Branchevereniging	Carton	https://ec.europa.eu/inl	Maybe		34	. Some basic harmonised prin	In the absence of non-harmonization the industry	Non-harmonization	**Economic**	Functioning of the Internal Market
125	F1472788	Changing Markets Foundation	NGO	not relevant	https://ec.europa.eu/inl	Maye		35	From a health perspective it is	Concens about regulation and enforcement of re	Communication	**Economic**	Consumer
126	F1472581	Artisan	Company	Ceramic	https://ec.europa.eu/inl	No							
127	F1472414	Koni GROB	Science & research	not relevant	https://ec.europa.eu/inl	No	Attachment in F1472416						
128	F1472416	Koni GROB	Science & research	not relevant	https://ec.europa.eu/inl	Yes		36	The declaration of compliance	There is poor information in the supply chain	DoC	**Economic**	Communication
128	F1472416	Koni GROB	Science & research	not relevant	https://ec.europa.eu/inl	Yes		36	Sure, in the area of FCMs enf	resources for enforcement are scarce	Enforcement	**Economic**	Public authorities
128	F1472416	Koni GROB	Science & research	not relevant	https://ec.europa.eu/inl	Yes		36	Sure, in the area of FCMs enf	Efficient tools for control and measures in case o	Enforcement	**Economic**	Public authorities
128	F1472416	Koni GROB	Science & research	not relevant	https://ec.europa.eu/inl	Yes		36	A specification of the content	For the large majority of the migrating substance	Scope	**Economic**	Regulatory burden
128	F1472416	Koni GROB	Science & research	not relevant	https://ec.europa.eu/inl	Yes		36	Regulation should support enf	Regulation for third country enforcement is not s	Third Country	**Economic**	Third Country
128	F1472416	Koni GROB	Science & research	not relevant	https://ec.europa.eu/inl	Yes		36	Authorities are unable to authorize every migrating substance and FCM on the market.			**Economic**	Public authorities
129	F1472411	European Bioplastics	Branchevereniging	Bioplastics	https://ec.europa.eu/inl	Yes		37	Currently, products made from bio-based plastics must undergo the same testing procedures as conventional plastic			**Information**	
129	F1472411	European Bioplastics	Branchevereniging	Bioplastics	https://ec.europa.eu/inl	Yes		37	Currently, products made from bio-based plastics must undergo the same testing procedures as conventional plastic			**Economic**	Regulatory burden
130	F1472413	Moineaux & Co	Company	Ceramic	https://ec.europa.eu/inl	No							
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	Rather than vertical measures	The current vertical structure of recycled plastics	Framework	**Economic**	
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	Differences between national	Different national rules lead to barriers to trade	Non-harmonization	**Economic**	Functioning of the Internal Market & Compliance costs
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	Differences between national	Different national rules lead to increase costs	Non-harmonization	**Economic**	Functioning of the Internal Market & Compliance costs
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	Differences between national	National rules are inconistent	Non-harmonized		
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	Differences between national	Mutual recognition principle does not work effec	Mutual recognition		
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	— On the exchange of safety	The lack of of obligation of exchange informatio	Communication	**Economic**	Communication
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	Rules are silent on the develo	New technologies are not addressed	Recycling (scope)	**Economic**	Innovation
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	Speed up the EFSA authorisat	Statement regarding EFSA authorisation	Recycling (authorization)	**Economic**	
131	F1472410	FoodDrinkEurope	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		38	ncrease resources in the DG S	Lack of resources at DG sante	Recycling (authorization)	**Economic**	Public authorities
132	F1472408	EuroCommerce	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		39	Due to a lack of EU rules for a	Rules differ between MS	Non-harmonized	**Economic**	Functioning of the Internal Market
132	F1472408	EuroCommerce	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		39	Due to a lack of EU rules for a	Mutual recognition principle does not work effec	Mutual recognition	**Economic**	Functioning of the Internal Market
132	F1472408	EuroCommerce	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		39	This fragmentation of the inte	Fragmentation causes legal uncertainties	Non-harmonized	**Economic**	Functioning of the Internal Market
132	F1472408	EuroCommerce	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		39	This fragmentation of the inte	Fragmentation hampers free circulation of good	Non-harmonized	**Economic**	Functioning of the Internal Market
132	F1472408	EuroCommerce	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		39	c. In addition, definitions neec	Definitions of "placed on the market" or "made a	FCM scope	**Economic**	Regulatory burden
132	F1472408	EuroCommerce	Branchevereniging	not relevant	https://ec.europa.eu/inl	Yes		39	The right regulatory framewo	Rules regarding the requirements for recycled m	Functional barrier	**Economic**	Regulatory burden
								17	FEVE supports policy initiative	Closed loop can better guarantee that products highest possible recycled content			
								18	ZWE agrees with the stateme	There is uncertainty regarding the dcontamination of chemical recycling technologies			
								18	The support for recycling tech	Concerns about life cycle assesments of new rec	Life Cycle		
								19	The required pace of innovatic	There is uncclarity for new recycling methods an	Recycling (general)		
								20	Differences between national	"Differences between national laws and adminis	Non-harmonized	**Economic**	
								20	Differences between national	National rules are inconistent: there is no unified	Non-harmonized	**Economic**	
								20	In the area of packaging, the f	The authorization of EFSA is slow	Recycling (harmonization)		
								21	For SMEs more specifically, g	Resources are needed to keep up with regulatory	General	**Economic**	Conduct of SME
								22	While we acknowledge that b	Bio-based materials can contain toxic chemicals	Bio-based	**Social**	Public health & safety and health systems
								23	Even after many years of worl	There is no EU repository for translated national	Non-harmonized	**Economic**	Functioning of the internal market, compliance costs, regulatory burden
								23	Even after many years of worl	The mutual recognition principle is not funcitonir	Mutual recognition	**Economic**	Functioning of the internal market
								23	The fact is that the EU legisla	EU legislation on FCM is complex and is only und	Complexity	**Economic**	Regulatory pressure
								23	It is true that currently the fin	There are over 100.000 individual substances tha	Migration and substances	**Social**	Public health & safety and health systems
								23	With regard to sensitive popu	The current risk assesment process for PRM is cc	Migration data and assesment	**Social**	Public health & safety and health systems
								23	A DoC for all FCMs would be v	The Doc does not contain all the necessary inforn	Decleration of compliance	**Economic**	Functioning of the internal market, compliance costs, regulatory burden
								24	DECLERATIONS OF COMPLIAN	The quality, accessibility and reliability of data in	Information	**Economic**	Communication
								24	DECLERATIONS OF COMPLIAN	Non harmonized rules complicates compliance fo	Non-harmonized	**Economic**	Functioning of the internal market, compliance costs, regulatory burden
								24	DECLERATIONS OF COMPLIAN	Non - Standardized DoC's impacts transation co	Decleration of compliance	**Economic**	Compliance costs
								24	DECLERATIONS OF COMPLIAN	The Nordic countries operate with DoCs for all FC	Decleration of compliance	**Economic**	Functioning of the internal market
								24	Plastic food packaging plays a	Current quality of plastic recyclates on the marke	Quality	**Circular Economy**	Secondary Raw Materials
								25	The potential of advanced phy	Future and innovative recycling processes are not	Recycling (scope)	**Circular Economy**	Production and consumption
								26	This new framework should a	Complexities related to definitions of multi-mate	Multi materials	**Economic**	Regulatory burden
								27	Although substances used in F	It is not sufficiently clear how to assess the subs	Non-harmonized	**Economic**	Regulatory burden
								27	Although substances used in F	SME's dont have sufficient resources to develop a	Migration data and assesment	**Economic**	SME's conduct
								27	Although substances used in F	Lack of clarity and guidance creates considerable	Migration data and assesment	**Economic**	SME's conduct
								27	Although substances used in F	Industry groups have created guidelines for risk a	Non-harmonized	**Economic**	Functioning of the internal market
								27	Although substances used in F	Non-harmonization impacts compliance to Articl	Non-harmonized	**Social**	Public health & safety and health systems
								27	Although substances used in F	Non-harmonization impacts reliable and heighte	Non-harmonized	**Economic**	Communication
								28	It is important to highlight tha	The lack of EU specific measure for fiber-based	Non-harmonized	**Social**	Public health & safety and health systems
								28	It is important to highlight tha	Industry guidelines for paper and board have bee	Non-harmonized	**Economic**	Functioning of the internal market
								28	Exchange of information along	Concerns over intellectual property rights	Communication	**Economic**	Competitiveness
								28	We would welcome if the pla	compliance evaluations of multi-materials, multi	Mutli-material	**Economic**	Regulatory burden
								29	GMP provide a direction for ec	Cepi has developed GMP guidelines having the ri	GMP	**Economic**	Functioning of the interanl market
								29	Due to the lack of harmonised	, the paper and board value chain has developed	Non-harmonized	**Economic**	Functioning of the interanl market
								29	Due to the lack of harmonised	DoC and exchange of information can compromis	Communication	**Economic**	Competitiveness

132	F1472408	EuroCommerce	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			39	Retailers and wholesalers hav	The rules regardng documentation are not sufficie	Declaration of compliance	**Economic**	Regulatory burden
132	F1472408	EuroCommerce	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			39	At the same time, it is key tha	Recovered material must be able to compete in a	Market	**Circular economy**	Secondary raw material
133	F1472407	CITPA	Branchevereniging	Ink	https://ec.europa.eu/in	Maybe	On behalf of Pac		40	Adequate exchange of safety and compliance information along the supply cha		Statement		
133	F1472407	CITPA	Branchevereniging	Ink	https://ec.europa.eu/in	Maybe	On behalf of Pac		40	The definition of safer and more sustainable alternatives is a multifactorial issu		Statement		
134	F1472406	FEICA - Association of the Europ	Branchevereniging	Adhesive	https://ec.europa.eu/in	Yes			41	Numerous national rules and	national rules and a lack of mutual recognition pe	Non-harmonization	**Economic**	Functioning of the Internal Market
134	F1472406	FEICA - Association of the Europ	Branchevereniging	Adhesive	https://ec.europa.eu/in	Yes			41	Numerous national rules and	Due to national rules and a lack of mutual recogn	Non-harmonization	**Economic**	Functioning of the Internal Market
134	F1472406	FEICA - Association of the Europ	Branchevereniging	Adhesive	https://ec.europa.eu/in	Yes			41	FEICA believes that chemical r	Chemical recycling is currently not addressed or r	Recycling (chemical)	**Economic**	Regulatory burden
135	F1472405	VOICE of Irish Concern for the Er	NGO	not relevant	https://ec.europa.eu/in	No								
136	F1472238	Anonym	Company	not relevant	https://ec.europa.eu/in	No								
137	F1472404	Food Industries Association of Au	Branchevereniging	not relevant	https://ec.europa.eu/in	Maybe			41	In Zusammenhang mit einem	Statement about the functioning of the current fe	Statement		
138	F1471854	European Printing Ink Associatio	Branchevereniging	Ink	https://ec.europa.eu/in	Yes			42	1. Lack of functioning of the in	Multiple laws in different Member States compli	Non-harmonization	**Economic**	Functioning of the Internal Market
138	F1471854	European Printing Ink Associatio	Branchevereniging	Ink	https://ec.europa.eu/in	Yes			42	Additional issues connected to	No legal reference to chemical recycling	Recycling (chemical)	**Economic**	Regulatory burden
138	F1471854	European Printing Ink Associatio	Branchevereniging	Ink	https://ec.europa.eu/in	Yes			42	The definition of safer and mo	Sustainability also needs to take into account the	Sustainability	**Environmeent**	Environmment
139	F1471848	NABU	NGO	not relevant	https://ec.europa.eu/in	Maybe			43	Zur Entwicklung einer Kreislau	Concerns about hazardous substances	safety	**Society**	Public health & safety and health systems
140	F1471835	terenko	Company	Ceramic	https://ec.europa.eu/in	No								
141	F1471836	ASSOBIBE	Branchevereniging	not relevant	https://ec.europa.eu/in	No	Same as food drink Europe F1472408							
142	F1471832	Anonym	Company	Ceramic	https://ec.europa.eu/in	No								
143	F1471830	AAF	Company	Ceramic	https://ec.europa.eu/in	No								
144	F1471829	Professionnelle des métiers d'ar	Company	Ceramic	https://ec.europa.eu/in	No								
145	F1471828	Anonym	Company	Ceramic	https://ec.europa.eu/in	No								
146	F1471827	A FLEUR DE POT	Company	Ceramic	https://ec.europa.eu/in	No								
147	F1471826	Frédérik Le Fur	Company	Ceramic	https://ec.europa.eu/in	No								
148	F1471825	Gaëlle Le Doledec	Company	Ceramic	https://ec.europa.eu/in	No								
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	ENABLE EFFECTIVE ENFORCE	Lack of resources for effective control	Enforcement	**Economic**	Public authorities
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	A recent test by four BEUC me	Food Contact Materials or Articles can contain (ha	zardous) unwanted substances	**Society**	Public health & safety and health systems
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	Except for plastic food contact	demonstrating compliance to the safety requiren	Safety	**Economic**	Regulatory burden
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	In the absence of harmonised	MS regulation lead to a fragmented regulatory fr	Non-harmonization	**Economic**	Functioning of the internal market
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	Further, a mechanism to facil	There are scientific uncertainties about safe levels of exposure		**Society**	Public health & safety and health systems
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	A precautionary approach is fi	The precautionary principle is not sufficiently ens	Precautionary	**Society**	Public health & safety and health systems
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	The concept of 'intended use'	Probelms with intended use and consumer beha	Intended use	**Society**	Public health & safety and health systems
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	A reformed EU FCM regime m	The labelling of products for intended use is insu	Labelling	**Society**	Public health & safety and health systems
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	Enforcement of EU FCM legisl	Concerns over enforcement	Enforcement	**Economic**	Public authorities
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	The public's right to know is a	Communication in the supply chain is insufficient	Traceability	**Economic**	Communication
149	F1471824	BEUC - The European Consumer	Consumerorganization	not relevant	https://ec.europa.eu/in	Yes			44	The presence of non-intention	Concerns over hazardous substances in recycled r	Safety	**Society**	Public health & safety and health systems
150	F1471821	Federalimentare (Italian Food as	Branchevereniging	not relevant	https://ec.europa.eu/in	No	Same as food drink Europe F1472408							
151	F1471820	Foodwatch	NGO	not relevant	https://ec.europa.eu/in	yes			45	Food Contact Materials are a	The FCM framework does not completely integra	Precautionary principle	**Society**	Public health & safety and health systems
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	Insufficient enforcement repr	Resources for enforcement are insuffcient	Enforcement	**Economic**	Public authorities
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	Insufficient enforcement repr	Knowledge for enforcement are insufficient	Enforcement	**Economic**	Public authorities
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	Regarding sustainability, we v	The frame fostering the use of recycling is not cl	Use	**Economic**	Regulatory burden
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	Guidelines on risk assessment	There is a lack of guidelines on risk assesment	Data and risk assesment	**Economic**	Regulatory burden
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	For example, at present, EFSA	EFSA only published criteria for the safety assess	Recycling (authorization)	**Economic**	Regulatory burdens
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	For example, at present, EFSA	The criterea for the risk assesment are based on	Recycling (authorization)	**Economic**	Regulatory burdens
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	For example, at present, EFSA	Criterea do not reflect current recycling practices	Recycling (authorization)	**Economic**	Regulatory burdens
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	For example, at present, EFSA	There are no criterea for other polymers than PE	Recycling (authorization)	**Economic**	Regulatory burdens
152	F1471702	European Plastics Converters	Converter	Plastic	https://ec.europa.eu/in	Yes			46	Plastics converters need not o	The DoC does not contain sufficient information a	Decleration of compliance	**Economic**	Communication
153	F1471250	ACE (Alliance for Beverage Cartc	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			47	Food safety is the highest prio	No LDPE / HDPE for use in beverage cartons is ne	Recycling (authorization)	**Economic**	Regulatory burdens
154	F1471246	EUROPEN - The European Organ	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			48	Plastic materials made from bio-based monomers are "plastics" following the r		Regulation	**x**	
154	F1471246	EUROPEN - The European Organ	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			48	With regard to plastics, curren	Recycled polymers must meet the necessary qua	Availability	**Circular Economy**	Secondary Raw Materials
		EUROPEN - The European Organ	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			48	To enable the achievement of	the FCM framework does not take the recyclabili	Design (Recylability)	**Circular Economy**	Production and consumption
154	F1471246	EUROPEN - The European Organ	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			48	The revision of FCMs rules can	play a key role in overcoming the existing critica	Recycling (authorization)	**Economic**	Regulatory burdens
155	F1471244	PlasticsEurope	Branchevereniging	Plastic	https://ec.europa.eu/in	Yes			49	More transparency and better	More communication should take place along the	Information & Traceability	**Economic**	Information and Communication technologies
156	F1471222	European Wax Federation aisbl	Branchevereniging	Wax	https://ec.europa.eu/in	Maybe								
157	F1471165	poterie du sens	Company	Ceramic	https://ec.europa.eu/in	No								
158	F1470681	The International Flight Services	Branchevereniging	not relevant	https://ec.europa.eu/in	No								
159	F1470680	SOS MCS	NGO	not relevant	https://ec.europa.eu/in	No								
160	F1470678	The Swedish Society for Nature	Ngo	not relevant	https://ec.europa.eu/in	No								
161	F1470673	Amtliches Kontrolllabor (Untersu	Government	not relevant	https://ec.europa.eu/in	Yes			50	Ein nach GMP erzeugtes FCM	muss aber grundsätzlich auch für den ihmzugeda	DoC		
161	F1470673	Amtliches Kontrolllabor (Untersu	Government	not relevant	https://ec.europa.eu/in	Yes			50	Um die Qualität und Sicherheit	eines FMCs zu verbessern, sollten über die allge	Scope		
162	F1470672	LES CERAMISTES DU BOIS DERN	Company	Ceramic	https://ec.europa.eu/in	No								
163	F1470624	European Snacks Association	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			51	While they intend to continue	Efficient waste management is needed to compl	Recycling (input)	**Circular Economy**	Waste Manageent
163	F1470624	European Snacks Association	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			51	The flexible packaging used w	no recycling processes that are approved by EFSA	Recycling (authorization)	**Circular Economy**	Secondary Raw Material
163	F1470624	European Snacks Association	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			51	While they intend to continue	Current barriers to recycling processes and techn	Innovation	**Economy**	Innovation and research
163	F1470624	European Snacks Association	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			51	A large percentage of investig	Concerns about rPET	NIAS & IAS	**Society**	Public health & safety and health systems
163	F1470624	European Snacks Association	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			51	Even though plastic recycling	Concerns about recycled material	NIAS & IAS	**Society**	Public health & safety and health systems
163	F1470624	European Snacks Association	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			51	Many types of plastics absorb	Insufficient infrastructure to propely manage wa	Waste management	**Circular Economy**	Waste Mnagement
163	F1470624	European Snacks Association	Branchevereniging	not relevant	https://ec.europa.eu/in	Yes			51	Speed up the EFSA authorisat	The authorization process under Regulation 282/	Recycling (authorization)	**Economy**	Regulatory burden
164	F1469900	Terre & N céramique	Company	Ceramic	https://ec.europa.eu/in	No								
165	F1469899	Anonym	Company	Ceramic	https://ec.europa.eu/in	No								
166	F1469901	I&P Europe - Imaging and Printir	Branchevereniging	Ink	https://ec.europa.eu/in	No								
167	F1469893	Cantine sans plastique France	Company	not relevant	https://ec.europa.eu/in	No								
168	F1469890	Glass Alliance Europe	Branchevereniging	Glass	https://ec.europa.eu/in	No								
169	F1469677	Verband der Keramischen Industrie e.V.		Ceramic	https://ec.europa.eu/in	No				We agree with what is mentic	Lack of testing facilities			
170	F1469328	Le Comptoir des Oxydes	Citizen/consumer	not relevant	https://ec.europa.eu/in	No								
171	F1468536	Anonym	Company	Ceramic	https://ec.europa.eu/in	No								
172	F1468098	Anonym	Citizen/consumer	Ceramic	https://ec.europa.eu/in	No								
173	F1468097	Anonym	Citizen/consumer	Ceramic	https://ec.europa.eu/in	No								
174	F1467770	Intergraf	Branchevereniging	Ink	https://ec.europa.eu/in	No								
175	F1467255	Metal Packaging Europe	Branchevereniging	Metal	https://ec.europa.eu/in	Maybe			52	Whilst the absence of EU rule	absence of EU rules complicates demonstrating c	Non-harmonized	**Economic**	Compliance cost
175	F1467255	Metal Packaging Europe	Branchevereniging	Metal	https://ec.europa.eu/in	Maybe			52	We agree that one set of harn	Non-harmonization impacts the enforcement by	Non-harmonized	**Economic**	Public authorities
176	F1467251	Safe Food Advocacy Europe (SAF	NGO	not relevant	https://ec.europa.eu/in	Yes			53	In addition to that, there is a r	Interconnection with REACH is not sufficient	Interconnection: REACH	**Society**	Public health
176	F1467251	Safe Food Advocacy Europe (SAF	NGO	not relevant	https://ec.europa.eu/in	Yes			53	According to the articles 16 ar	Control on the DoCs is not sufficient		**Economic**	Communication
176	F1467251	Safe Food Advocacy Europe (SAF	NGO	not relevant	https://ec.europa.eu/in	Yes			53	The main problem is that toxi	Lack of available toxicity and exposure informati	Risk assesment	**Economic**	Innovation and research
176	F1467251	Safe Food Advocacy Europe (SAF	NGO	not relevant	https://ec.europa.eu/in	Yes			53	The main issues concerning th	Concerns over substances in recycled materials	Migration	**Society**	Public health
176	F1467251	Safe Food Advocacy Europe (SAF	NGO	not relevant	https://ec.europa.eu/in	Yes			53	while guarantee consumers s	Concerns over adverse impact of substances	Migration	**Society**	Public health
177	F1467248	Générations Futures			https://ec.europa.eu/in	no								
178	F1466046	Collectif National des Céramiste	Branchevereniging	Ceramic	https://ec.europa.eu/in	No								
179	F1466816	European Recycling Platform	Recycler	Plastic	https://ec.europa.eu/in	Yes			54	to address new recycling tech	secondary materials obtained from mechanical r	Use	**Circular Economy**	Production and consumption
180	F1466044	Merieux Nutrisciences Italy	Testing lab	Not relevant	https://ec.europa.eu/in	No								
181	F1466004	Confartigianato Imprese	Branchevereniging	Ceramic	https://ec.europa.eu/in	No								
182	F1466003	Plastic Soup Foundation	NGO		https://ec.europa.eu/in	No								
183	F1465703	Poterie de Passe Velou	Company	Ceramic	https://ec.europa.eu/in	No								
184	F1465699	CPME	Branchevereniging	Unkown	https://ec.europa.eu/in	yes			55	Whilst the absence of EU rule	Absence of harmonized rules complicated demor	non-harmonization	**Economic**	Compliace
185	F1465693	Jérôme Roussel	Company	Ceramic	https://ec.europa.eu/in	No								
186	F1465696	Vincent Tournebize	Citizen/consumer	Ceramic	https://ec.europa.eu/in	No								
187	F1465692	The European Federation of Cera	Branchevereniging	Ceramic	https://ec.europa.eu/in	No								
188	F1465638	thierry landault	Company	Ceramic	https://ec.europa.eu/in	No								
189	F1465634	Landesuntersuchungsanstalt Sac	Government	not relevant	https://ec.europa.eu/in	Yes			56	Stellungnahme der EFSA "Upd	Materials from a natural origin can be contamina	Safety	**Society**	Pubic health
189	F1465634	Landesuntersuchungsanstalt Sac	Government	not relevant	https://ec.europa.eu/in	Yes			56	Der Hersteller des Endprodukt	SMEs lack human and financial resources to mee	Compliance	**Economic**	Compliance costs
190	F1465048	FFI Fachverband Faltschachtel-Ir	Branchevereniging	Carto	https://ec.europa.eu/in	Maybe				Der Ecorys-Bericht hat die besonderen Schwierigkeiten von KMUs aufgezeigt. M		DoC	**Economic**	Functioning of the interal market
191	F1464798	Atelier céramique de Saint-Ama	Company	Ceramic	https://ec.europa.eu/in	No								
192	F1464786	Anonym	Company	Ceramic	https://ec.europa.eu/in	NO								
193	F1464713	Anonym	Company	Ceramic	https://ec.europa.eu/in	No								
194	F1464254	Fidra	NGO	not relevant	https://ec.europa.eu/in	NO								
195	F1464239	atelier Pachamama terres	Company	Ceramic	https://ec.europa.eu/in	No								
196	F1463975	Réseau Environnement Santé	NGO	not relevant	https://ec.europa.eu/in	No								
197	F1463456	No Plastic In My Sea	NGO	not relevant	https://ec.europa.eu/in	No								
198	F1463452	Entre Pot's	Company	Ceramic	https://ec.europa.eu/in	No								
199	F1463449	Le Bois de Maffé	Company	Wood	https://ec.europa.eu/in	No								
200	F1463437	ATELIERS ART DE FRANCE	Branchevereniging	not relevant	https://ec.europa.eu/in	No								
201	F1463433	Health and Environment Alliance	NGO	not relevant	https://ec.europa.eu/info/law/better-regulation/have-yo				57	Recycled materials are not as	Recycled materials are not assessed for their ad	Migration data & testing	**Society**	Pubic health
202	F1463393	TÜV Rheinland	Company	Unkown	https://ec.europa.eu/in	No								
203	F1463385	Fecc	Branchevereniging	Unkown	https://ec.europa.eu/in	YES			58	In order to harmonize EU rule	Not all reference laboratories are equipped with	Migration data & testing	**Economic**	Compliance costs
203	F1463385	Fecc	Branchevereniging	Unkown	https://ec.europa.eu/in	YES			58	Safety and circularity checks is	Current methods of sampling and analysis are n	Data and analysis	**Economic**	Innovation and research
203	F1463385	Fecc	Branchevereniging	Unkown	https://ec.europa.eu/in	YES			58	The harmonisation on EU rule	Fragemented system of harmonization results in	Non-harmonization	**Circular Economy**	Secondary Raw Materials
204	F1462811	MAGO LAB	Company	Ceramic	https://ec.europa.eu/in	No								
205	F1462392	cat trochu ceramic	Company	Ceramic	https://ec.europa.eu/in	No								

206	F1460552	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
207	F1461929	poterie des bleuets	Company	Ceramic	https://ec.europa.eu/inl	No										
208	F1463242	Mg	Company	Ceramic	https://ec.europa.eu/inl	No										
209	F1462812	Céramiste Professionnelle	Company	Ceramic	https://ec.europa.eu/inl	No										
210	F1461929	poterie des bleuets	Company	Ceramic	https://ec.europa.eu/inl	No										
211	F1460552	potière	Company	Ceramic	https://ec.europa.eu/inl	No										
212	F1460351	La terre s'enmêle	Branchevereniging	Ceramic	https://ec.europa.eu/inl	No										
213	F1459484	Henkel AG	Branchevereniging	Unkown	https://ec.europa.eu/inl	No		59	As already exemplary implem	There is a lack of general guidance document for	Guidance document	**Economy**	Regulatory burden			
213	F1459484	Henkel AG	Branchevereniging	Unkown	https://ec.europa.eu/inl	No		59	As already exemplary implem	It is difficult for SMEs to properly fulfill their role	SME	**Economy**	Operation conduct of SME's			
213	F1459484	Henkel AG	Branchevereniging	Unkown	https://ec.europa.eu/inl	No		59	In addition to a guidance docu	There is lack of clear advice on migration testing	Migration data and assesment	**Economy**	Regulatory burden			
213	F1459484	Henkel AG	Branchevereniging	Unkown	https://ec.europa.eu/inl	No		59	To permit the use of more sus	There are no rules for the safe use of plant or bi	Bio-based materials	**Circular Economy**	Secondary Raw Materials			
214	F1459483	Kom op tegen Kanker - vzw	NGO	not relevant	https://ec.europa.eu/inl	No										
215	F1459404	FEDEPESCA	Branchevereniging	not relevant	https://ec.europa.eu/inl	No		64	In addition, We have a proposa	regarding the management of packaging. We t	Labelling & Design	**Circular Economy**	Production and consumption			
216	F1459360	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
217	F1456468	Potière	Company	Ceramic	https://ec.europa.eu/inl	No										
218	**F1456466**	Céramique Leba Condon	Company	Ceramic	https://ec.europa.eu/inl	No										
219	F1456306	F.A.I.R.E argile	Branchevereniging	Ceramic	https://ec.europa.eu/inl	No										
220	F1456303	atelier artiste	Company	Ceramic	https://ec.europa.eu/inl	No										
221	F1455414	Poterie des Gets	Company	Ceramic	https://ec.europa.eu/inl	No										
222	F1455404	Faïencerie de la Doller	Branchevereniging	not relevant	https://ec.europa.eu/inl	No										
223	F1455399	gouvernance collégiale	Branchevereniging	not relevant	https://ec.europa.eu/inl	No										
224	F1455398	PAPACKS	Company	Bio-based	https://ec.europa.eu/inl	Yes		60	To this end, adequate, harmo	The non-harmonization of rules gives the impres	Non harmonization	**Economy**	Regulatory burden			
224	F1455398	PAPACKS	Company	Bio-based	https://ec.europa.eu/inl	Yes		60	At the same time, small and r	SME's lack resources to ensure compliance	Compliance & Enforcement	**Economy**	Operation conduct of SME's			
224	F1455398	PAPACKS	Company	Bio-based	https://ec.europa.eu/inl	Yes		60	To this end, adequate, harmo	The current complex systems impact the the co	Framework	**Economy**	Operation conduct of SME's			
224	F1455398	PAPACKS	Company	Bio-based	https://ec.europa.eu/inl	Yes		60	PAPACKS sees the opportunity	Examples SRM		**Circular Economy**	Production and consumption			
224	F1455398	PAPACKS	Company	Bio-based	https://ec.europa.eu/inl	Yes										
225	F1455395	Ceramik mak	Company	Ceramic	https://ec.europa.eu/inl	No										
226	F1455397	Matthieu Robert céramique	Company	Ceramic	https://ec.europa.eu/inl	No										
227	F1455391	Ceramista. Artigianato artistico.	Company	Ceramic	https://ec.europa.eu/inl	No										
228	F1455390	Ceramista. Artigianato artistico.	Company	Ceramic	https://ec.europa.eu/inl	No										
229	F1455388	AFTAB	Company	Wood	https://ec.europa.eu/inl	No										
230	F1455323	poterie	Company	Ceramic	https://ec.europa.eu/inl	No										
231	F1455305	ALPLA Werke Alwin Lehner Gmb	Company	Unkown	https://ec.europa.eu/inl	No		61	safety assessment specific to	The requriements for recyclates produced outside	Requirements	**Economy**	Third Country			
231	F1455305	ALPLA Werke Alwin Lehner Gmb	Company	Unkown	https://ec.europa.eu/inl	No		61	In relation to this, more clarit	There is no harmonized assessment procedure fo	Recycling (safety evaluation)	**Circular Economy**	Secondary Raw Materials			
231	F1455305	ALPLA Werke Alwin Lehner Gmb	Company	Unkown	https://ec.europa.eu/inl	No		61	For the issue "Exchange of saf	Recyclates from third country lack sufficient info	Information & communication	**Economy**	Third Country			
231	F1455305	ALPLA Werke Alwin Lehner Gmb	Company	Unkown	https://ec.europa.eu/inl	No		61	Since majority of suppliers can be SMEs, some harmonized, simplified and digi		Information & communication	**Economy**	Information and Communication technologies			
231	F1455305	ALPLA Werke Alwin Lehner Gmb	Company	Unkown	https://ec.europa.eu/inl	No		61	Finally, some harmonized ass	PEF, PEN etc. are not covered.	Recycling (safety evaluation)	**Circular Economy**	Secondary Raw Materials			
232	F1455267	ZERO - Association for the Susta	Company	Unkown	https://ec.europa.eu/inl	No										
233	F1455247	Petit tour à l'atelier	Company	Ceramic	https://ec.europa.eu/inl	No										
234	F1455232	Céramistes de Bourgogne Franc	Company	Ceramic	https://ec.europa.eu/inl	No										
235	F1455179	Melanie BERGMANN	Citizen / Consumer	not relevant	https://ec.europa.eu/inl	No										
236	**F1455170**	La Boésie	Company	Wood	https://ec.europa.eu/inl	No										
237	F1455151	Norwegian University of Science	Science & research	not relevant	https://ec.europa.eu/inl	Maybe			As scientist working on the safety of chemicals in FCMs, I very much appreciate	x		**Information**				
238	F1455116	European Carton Makers Association		Carton	https://ec.europa.eu/inl	Yes		62	ECMA is strongly in favour of t	Non-harmonization creates operational uncertain	Non-harmonization	**Economic**	Compliance costs			
238	F1455116	European Carton Makers Association		Carton	https://ec.europa.eu/inl	Yes		62	ECMA is strongly in favour of t	Non-harmonization impacts costs and complexity	Non-harmonization	**Economic**	Regulatory Burden			
238	F1455116	European Carton Makers Association		Carton	https://ec.europa.eu/inl	Yes		62	Looking back into the sector e	SME's are encountering difficulties in the compli	Compliance & enforcement	**Economic**	Conduct of SME's			
239	F1455084	Artisan d'art	Company	not relevant	https://ec.europa.eu/inl	No										
240	F1455061	entreprise en nom propre	Company	Ceramic	https://ec.europa.eu/inl	No										
241	F1454997	Anonym	Citizen / Consumer	Ceramic	https://ec.europa.eu/inl	No										
242	F1454527	auto entrepreneur	Company	Ceramic	https://ec.europa.eu/inl	No										
243	F1454477	Isabelle Nadeau	Company	Ceramic	https://ec.europa.eu/inl	No										
244	F1454389	tourautourabois	Company	Wood	https://ec.europa.eu/inl	No										
245	F1454386	Anonym	Citizen / Consumer	not relevant	https://ec.europa.eu/inl	No										
246	F1454376	Food, Nutrition and Health Unit -	Science & research	not relevant	https://ec.europa.eu/inl	No										
247	F1454347	Anonym	Citizen / Consumer	not relevant	https://ec.europa.eu/inl	No										
248	F1454331	European Carton Makers Association		Carton	https://ec.europa.eu/inl	No	Same as F1454331									
249	F1454278	Atelier WAX	Company	Wax	https://ec.europa.eu/inl	No										
250	F1454260	microentreprise	Company	Wood	https://ec.europa.eu/inl	No										
251	F1454257	entreprise en nom propre	Company	Wood	https://ec.europa.eu/inl	No										
252	F1454250	Anonym	Citizen / Consumer	not relevant	https://ec.europa.eu/inl	No										
253	F1453867	Entreprise en nom propre	Company	Wood	https://ec.europa.eu/inl	No										
254	F1453639	Entreprise en nom propre	Company	Wood	https://ec.europa.eu/inl	No										
255	F1453633	Coop Italia SC	Company	not relevant	https://ec.europa.eu/inl	No										
256	F1452998	patrick rames	Company	Ceramic	https://ec.europa.eu/inl	No										
257	F1452481	atelier	Company	Ceramic	https://ec.europa.eu/inl	No										
258	F1451694	Tourneur sur bois	Company	wood	https://ec.europa.eu/inl	No										
259	F1451692	Tom Leveau	Company	Ceramic	https://ec.europa.eu/inl	No										
260	F1451028	Simplement Bois	Company	wood	https://ec.europa.eu/inl	No										
261	F1448230	L'Atelier - Céramique	Company	Ceramic	https://ec.europa.eu/inl	No										
262	F1448214	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
263	F1447272	Bouzar Leïla (Chemin de la potiè	Company	Ceramic	https://ec.europa.eu/inl	No										
264	F1446958	Atelier d'Escampette	Company	Ceramic	https://ec.europa.eu/inl	No										
265	F1446149	micro entreprise	Company	Ceramic	https://ec.europa.eu/inl	No										
266	F1446088	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
267	F1446076	Potière artisane d'art	Company	Ceramic	https://ec.europa.eu/inl	No										
268	F1445959	CERAMISTE	Company	Ceramic	https://ec.europa.eu/inl	No										
269	F1445241	Bubostyl	Company	Wood	https://ec.europa.eu/inl	No										
270	F1445240	Anonym	Company	Unkown	https://ec.europa.eu/inl	No										
271	F1445236	micro atelier	Company	Ceramic	https://ec.europa.eu/inl	No										
272	F1445231	poterie de Mostuéjouls	Company	Ceramic	https://ec.europa.eu/inl	No										
273	F1443283	microentreprise	Company	Ceramic	https://ec.europa.eu/inl	No										
274	F1446071	Baschieri Céramique	Company	Ceramic	https://ec.europa.eu/inl	No										
275	F1436712	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
276	F1432402	Sean Miller	Company	Ceramic	https://ec.europa.eu/inl	No										
277	F1430502	DOCEOR	Company	Unkown	https://ec.europa.eu/inl	No										
278	F1430501	atelier de poterie et de céramiqu	Company	Ceramic	https://ec.europa.eu/inl	No										
279	F1421040	Muriel Baievitch	Company	Ceramic	https://ec.europa.eu/inl	No										
280	F1403227	Importer of Food Products	Importer	not relevant	https://ec.europa.eu/inl	Maybe		63	Nous sommes une TPE de 4 sa	Compliance to the requirements is difficult for dc	Compliance	**Economy**	Information and Communication technologies			
281	F1402442	Le Loir dans l'Arrosoir	Company	Ceramic	https://ec.europa.eu/inl	No										
282	F1401614	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
283	F1398994	poterie	Company	Ceramic	https://ec.europa.eu/inl	No										
284	F1398466	SBR céramique	Company	Ceramic	https://ec.europa.eu/inl	No										
285	F1398460	auto-entreprise	Company	Ceramic	https://ec.europa.eu/inl	No										
286	F1397882	entreprise individuelle	Company	Ceramic	https://ec.europa.eu/inl	No										
287	F1397014	Atelier Claire Chaouat céramiqu	Company	Ceramic	https://ec.europa.eu/inl	No										
288	F1396498	TPE	Company	Ceramic	https://ec.europa.eu/inl	No										
289	F1396438	Blanc Renard Ceramics	Company	Ceramic	https://ec.europa.eu/inl	No										
290	F1395545	Artisan potier-céramiste	Company	Ceramic	https://ec.europa.eu/inl	No										
291	F1391647	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
292	F1389121	Atelier des Girelles	Company	Ceramic	https://ec.europa.eu/inl	No										
293	F1385360	Poterie d'Albion	Company	Ceramic	https://ec.europa.eu/inl	No										
294	F1385288	Porcepolis	Company	Ceramic	https://ec.europa.eu/inl	No										
295	F1381730	Tim Thornton Ceramics	Company	Ceramic	https://ec.europa.eu/inl	No										
296	F1369890	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
297	F1373984	l'atelier du jardinier 59149 Aibes	Company	Ceramic	https://ec.europa.eu/inl	No										
298	F1364672	Anonym	Citizen / Consumer	not relevant	https://ec.europa.eu/inl	No										
299	F1374062	NGO Plastic Planet Austria	NGO	not relevant	https://ec.europa.eu/inl	No										
300	F1381409	Céramiste professionnel	Company	Ceramic	https://ec.europa.eu/inl	No										
301	F1363765	Mathieu Colmant	Company	not relevant	https://ec.europa.eu/inl	Maybe			Bonjour,Actif dans la sécurité	The framework in generally is complex to unders	Economy	**SME**				
301	F1363765	Mathieu Colmant	Company	not relevant	https://ec.europa.eu/inl	Maybe			Bonjour,Actif dans la sécurité	Compliance for SME s is challenging	Economy	**SME**				
302	F1358411	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										
302	F1358411	Anonym	Company	Ceramic	https://ec.europa.eu/inl	No										

Annex 3 Results Consultation Review of Regulation 282/2008

				https://ec.europa.eu/infi	Selection criterea: material (		Conclusion (1 duplicate					
FCM Number	Contributor	Actor in supply Chain	Material	**Source**	Relevant	Comment	Reference Number	Literal statement	Summary / interpretation	Category	**Indicator**	Subindicator
F2761206	Ksenia Miśkiewicz	Citizen / Consumer	not relevant	https://ec.europa.eu/infi	No		1					
F2762824	Anonymous	Third Country Citizen / Consu	not relevant	https://ec.europa.eu/infi	Maybe		2	In the draft regulation, only t	Obligations of the recyclers / developers loc	Third Country	**Economic**	Third and developing countries
F2762927	F&H A/S	Company	not relevant	https://ec.europa.eu/infi	Maybe		3					
F2764481	Anonymous	Citizen / Consumer	not relevant	https://ec.europa.eu/infi	Yes		4	Bitte um Klarstellung über Re	Obligations of the recyclers / developers loc	Third Country	**Economic**	Third and developing countries
F2764481	Anonymous	Citizen / Consumer	not relevant	https://ec.europa.eu/infi	Yes		4	Artikel 12 (c) Wie sollen Infor	It is in the draft not sufficiently clear how to provide information about substances		**Economic**	Innovation and research
F2764631	Constantia Flexibles	Company/business organisati	not relevant	https://ec.europa.eu/infi	No		5					
F2766494	CAPEC	Company/business organisati	not relevant	https://ec.europa.eu/infi	yes		6	We welcome the fact that th	The old regulation is focused on PET		**Circular Econ**	Production and consumption
F2766916	Jerónimo Martins, SGPS	Company/business organisati	not relevant	https://ec.europa.eu/infi	No		7					
F2767625	Gustaaf BosConsulting	Company/business organisati	not relevant	https://ec.europa.eu/infi	Yes	Same contribu	8	1) Annex III, Templates for de	It is not sufficiently clear when something is considered as recycled content (divid		**Economic**	Regulatory burden
F2767625	Gustaaf BosConsulting	Company/business organisati	not relevant	https://ec.europa.eu/infi	Maybe	Same contribu	8	Here it should also be taken i	Information regarding use of polymers		**Information**	
F2768377	Berry | CPI	Company/business organisati	not relevant	https://ec.europa.eu/infi	Maybe		9	It is not clear when a recycler	Obligations of the recyclers / developers located in the EU are not sufficiently clear		**Economic**	Third and developing countries
F2771823	Czech Chamber of Commer	Company/business organisati	not relevant	https://ec.europa.eu/infi	No		10					
F2771840	Gustaaf Bos Consulting	Company/business organisati	not relevant	https://ec.europa.eu/infi	Maybe	Same contribu	8					
F2771846	DECO	Consumer organization	not relevant	https://ec.europa.eu/infi	No	Portugese, tra	11					
F2771886	Ministry of Agriculture of La	Government / Authority	not relevant	https://ec.europa.eu/infi	Yes		12	“In the draft regulation, only	Obligations of the recyclers / developers located in the EU are not sufficiently clear		**Economic**	Third and developing countries
F2772042	Polymetrix AG	Company/business organisati	Plastic	https://ec.europa.eu/infi	Maybe		13	How can a process owner apply for registration if he is not a recycler?(def		Recycling (application)	**Economic**	Regulatory burden
F2772042	Polymetrix AG	Company/business organisati	Plastic	https://ec.europa.eu/infi	Maybe		13	Assume equipments develop	It is not sufficiently clear if authorization fo	Recycling (application)	**Economic**	Regulatory burden
F2772044	Anonymous	Company/business organisation		https://ec.europa.eu/infi	Maybe		14	Are adaptions of a technolog	It is not sufficiently clear how to deal with c	Recycling (application)	**Economic**	Regulatory burden
F2779991	Lebensmittelverband Deuts	Company/business organisation		https://ec.europa.eu/infi	Yes		15	Ohne die Einbeziehung der ch	emischen Recyclingtechnologie gibt es der	Recycling (chemical)	**Circular Econ**	Secondary Raw Materials
F2779991	Lebensmittelverband Deuts	Company/business organisation		https://ec.europa.eu/infi	Yes		15	Wir finden es positiv, dass das Problem der unbeabsichtigten Verunreinigung (NIAS) als wahrscheinlicher Bestandteil von recycelten Materialien und Artikeln anerkannt wird.				
F2779991	Lebensmittelverband Deuts	Company/business organisation		https://ec.europa.eu/infi	Yes		15	ie im aktuellen Entwurf zu les	Using only waste is too restrictive for the input			
F2779991	Lebensmittelverband Deuts	Company/business organisation		https://ec.europa.eu/infi	Yes		15	Gerade derhohe Zeitbedarf is	There are no deadlines for EFSA and the EC. This leads to a long and burdensome application procedures. This impacts business legal certainty			
F2778773	CPME	Business association	Plastic	https://ec.europa.eu/infi	Yes		16	Other Supporting Informatic	EFSA does not review recycling processes outside of the scope		**Economic**	Public authorities
F2778773	CPME	Business association	Plastic	https://ec.europa.eu/infi	Yes		16	By implication, the current	Regulation 10/2011 applies to substances from anymanufacturing method, from an		**Information**	
F2778773	CPME	Business association	Plastic	https://ec.europa.eu/infi	Yes		16	As investment in Chemical	Recycling plants is very high, the industry needs someform of certainty that the plant		**Econommic**	Innovation and research
F2778773	CPME	Business association	Plastic	https://ec.europa.eu/infi	Yes		16	Recycling processes are	developing, varied and can use materials from a r	Future proof	**Econommic**	Regulatory burden
F2778773	CPME	Business association	Plastic	https://ec.europa.eu/infi	Yes		16	Sampling frequency can have	Sampling frequency can have a serious impact on a business and increase the costs		**Economic**	compliance costs
F2778773	CPME	Business association	Plastic	https://ec.europa.eu/infi	Yes		16	There is currently not enough	There is not enough competent lab capacity to test for NIAS		**Economic**	Compliance costs
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	The impact assessment should also examine how the proposal would affect theprovisions on reporting of recycli			**Information**	
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	We welcome the proposal to limit the duration of the EFSA evaluation in		Recycling (Authorization)	**Economic**	Compliance costs
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	Unlike the previous regulation, the proposal does not contain any regula		PIR and byproducts	**Information**	
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	The proposal does not include a provision for recycled plastics to be used		Functional barrier	**Information**	
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	It is therefore important for	for food packaging the use of recyclates is severely restricted by law		**Circular Econ**	Secondary Raw Materials
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	It is therefore important for	the quality of recyclates from mechanical recycling is not sufficient for many appli		**Circular Econ**	Production and consumption
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	The proposal in the Annex th	There is scarce supply of rPET from deposit cycles (for use in food contact and othe		**Circular Econ**	Secondary Raw Materials
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	The proposal in the Annex th	The legally non-binding EFSA recommendation from 2011 that 5% non-food conta		**Economic**	Innovation and research
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	The previous regulations of R	Status of decontamination process vs certa	Waste treatment	**Information**	
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	The designation of a closed p	Narrow understanding of a closed loop		**Economic**	Regulatory burden
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	All the more so as the industry has already takenvoluntary steps to label r		Labelling	**Economic**	Functioning of internal market
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	With a number of proposals,	Art. 5(1)(l) of Regulation 1935/2004 only al	Labelling	**Social**	Governance and good administration
F2777662	IK Industrievereinigung Kur	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		17	The wase related definitions,	Legal basis for waste		**Information**	
F2779993	Plastics Recyclers Europe	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		18	3. ‘plastic input’ – Article 2(3	The definition of plastic inputs limits the input to decontamination of post-consu		**Economic**	Regulatory burden
F2779993	Plastics Recyclers Europe	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		18	The proposed definition com	The term ‘recycling process’ is not aligned with the definition of recycling in the W		**Information**	
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	t scraps and offcuts often	require some kind of process to make themusat	Scraps and offcuts	**Information**	
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	Barrier layer (A/B/A) is the	most common structure used in rPET food tray	Functional barrier	**Information**	
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	This wording suggests that	washing constitutes always part of closed-loo	Closed loop recycling	**Information**	
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	Labelling rules do not exist fc	Labelling rules do not exist for recycled plas	Labelling	**Economic**	Regulatory burden
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	While 282/2008 applies to tl	Management of waste is outside the scope c	Waste management	**Economic**	Regulatory burden
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	What happens if the operato	It is insufficiently clear what happens when	Recycling (authorization)	**Economic**	Regulatory burden
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	Off-cuts and scrap regrinded	within the same company (other location) a	Offcuts and scraps	**Information**	
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	In case of importation of recy	competent authorities locatedoutside the EU may not have the resources, expertis		**Economic**	Third and developing countries
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	Annex 1 table 1 defines the sp	Unclear how to count the 5% . For example how to count te multilayers polyesters		**Economic**	Regulatory burden
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	Art 6 Requirements for collection and preprocessing	This lays down rules for waste collection, changing actual p		**Circular Econ**	Waste
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	Art 21(5) The authorisation h	The requirements and the obligations for the licence holder are not suffciently clea		**Circular Econ**	Secondary Raw Materials
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	Art 22 request for the modifi	The requirements and the obligations for the licence holder are not suffciently clea		**Circular Econ**	Secondary Raw Materials
F2779997	European Plastics Converte	Converter	Plastic	https://ec.europa.eu/infi	Yes		19	The whole FCM control syste	Lack of resources from control authorities		**Economic**	Public authorities
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	Whereas (10) and Art. 4.2: it	Recycled plastics have unknown composition.		**Economic**	Regulatory burden
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	4.Whereas (21) and Chapters	Requirements and obligations for recycler located in non-EU countries are not suffi		**Economic**	Third and developing countries
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	2.Article 6.1.(b): it appears	impossible to know if collected plastic waste is in compliance with Regulation 10/2011.			
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	partially depolymerised	substances or oligomers,These are commonlyconsidered to be authorised by Art. 6 poin		**Information**	
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	"While Regulation (EC) No	1935/2004 lays down specific rules for the lab	Labelling	**Information**	
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	The previous Regulation	282/2008 very usefully stated that plastics originating from such chemical recycling we		**Information**	
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	Chapter II – Placing on the m	There is insufficient distinction between recycled plastic on one hand, and (finishe		**Economic**	Regulatory burden
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	Commented [MV37]: It is not	clear how a recycledplastic can comply with the compositionalrequirements of Re		**Information**	
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	How can the converter, maki	Hard to understand the source of migrants		**Information**	
F2780005	Amcor Flexibles EMEA	Converter	Plastic	https://ec.europa.eu/infi	Yes		20	In the same way as whenlook	Guidance on type of on contaminants shou	NIAS		
F2780464	Eastman	Recycler	Plastic	https://ec.europa.eu/info/law/better-regulation/have			21	We appreciate the exempt of	authorized substances included in the Unio	Recycling targets	**Circular Econ**	Production and consumption
F2780464	Eastman	Recycler	Plastic	https://ec.europa.eu/info/law/better-regulation/have			21	We fully support the idea that	imported food contact material containing recycled content must comply with tl		**Economic**	Third and developing countries
F2780464	Eastman	Recycler	Plastic	https://ec.europa.eu/info/law/better-regulation/have			21					
F2780473	Citeo	Other	not relevant	https://ec.europa.eu/infi	Yes		22	Citeo welcomes the aim of the regulation to ensure food safety of recycle		Functional barrier	**Circular Econ**	Production and consumption
F2780473	Citeo	Other	not relevant	https://ec.europa.eu/infi	Yes		22	The Annex 1 lists all suitable technologies that come into the scope of the		5% PCW	**Circular Econ**	Waste management
F2780473	Citeo	Other	not relevant	https://ec.europa.eu/infi	Yes		22	Pursuant article 19 of the Draft Regulation, the Commission grants autho		Time line	**Economic**	Regulatory burden

F2785153	KUNSTSTOFF.swiss Swiss Pla	Company/business organisati	Plastic	https://ec.europa.eu/infi	Maybe		23					
F2785145	APK AG	recycler	Plastic	https://ec.europa.eu/infi	Yes		24	Comment & recommendation: We welcome a uniform approach and def	Future proof	Economic	Regulatory burden	
F2785528	SAFE - Safe Food Advoacy Eu	NGO		https://ec.europa.eu/infi	Yes		25	Among them, SAFE focuses on the emerging high-risk issue of the increasi	Safety	Social	Public health & safety and health systems	
F2785528	SAFE - Safe Food Advoacy Eu	NGO		https://ec.europa.eu/infi	Yes		25	Introduce sorting systems that separate FCM from non-food grade plastic	Recycling (input: sorting)	Circular Econo	Waste management	
F2785528	SAFE - Safe Food Advoacy Eu	NGO		https://ec.europa.eu/infi	Yes		25	In addition, this mechanism of enforcement has proved to be weak, as di	Enforcement	Economic	Public authorities	
F2785528	SAFE - Safe Food Advoacy Eu	NGO		https://ec.europa.eu/infi	Yes		25	In addition, this mechanism Official control, which is carried out by Member States' Competent Authorities, ar		Economic	Public authorities	
F2785528	SAFE - Safe Food Advoacy Eu	NGO		https://ec.europa.eu/infi	Yes		25	One of these studies analyses There is evidence of deliberate recycling of non-food plastics into new food packag		Economic	Fraud (intended non-compliance)	
F2785528	SAFE - Safe Food Advoacy Eu	NGO		https://ec.europa.eu/infi	Yes		25	We welcome the intention n Details on risk assesment that are used for the evaluating the safety of recycling tec		Economic	Innovation and research	
F2785528	SAFE - Safe Food Advoacy Eu	NGO		https://ec.europa.eu/infi	Yes		25	A deeper harmonisation is re Lack of enforcement controls of the recycling processes and decontamination pro		Economic	Publi	
F2785525	Fédération du Commerce e	Company/business organisation		https://ec.europa.eu/infi	Maybe look in Frans		26					
F2785521	Industrieverband Papier- ur	Business association		https://ec.europa.eu/infi	No		27					
F2785513	Next Generation Recyclingr	Recycler		https://ec.europa.eu/infi	No		28					
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	Faerch welcome that the Reg In the current regulation rules to facilitate i	Inspection	Economic	Public authorities	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	Faerch strongly believe that t Current regulation does not explicitly requ	Risk assesment	Economic	Regulatory burdens pressure	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	Faerch strongly believe that t Currently risk assessments of recycled plasti	Inspection	Economic	Public authorities	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	The purpose of the European Food packaging Legislation is to secure the s	Scope	Circular Econo	Secondary Raw Materials	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	Faerch support the general re In the current regulation no general requirement that all recycled plastic should be		Circular Econo	Secondary Raw Materials	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	The purpose of the European Regulation should make seperation between recycled raw materials and products c		Circular Econo	Secondary Raw Materials	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	For PET it is well-established Not all polymers can be recycled repeteadly. The nature and hazardous properties		Economic	Innovation and research	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	The Legislation introduces th There are different recycling schemes such a	Recycling schemes	Information	Innovation and research	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	Offcuts and scraps that are re The product status of offcuts and scraps (end of life, byproduct) is not sufficienlty c		Circular Econo	Waste	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	For contaminants from recyc Safety evaluation of contaminants from recycled PET has to be done by calculation		Economic	Regulatory burdens pressure	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	The "general risk assessments The recycler does not know all the future us Actors in the supply chain		Economic	Regulatory burdens pressure	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	We understand that the Com Concerns about the ability of EFSA to safety assess all uses		Economic	Public authorities	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	The Commission should also EFSA has not evaluated the use of the recycled PET in microwave or hot ovens so far		Economic	Innovation and research	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	For any grade of rPET the "ma The "max %" depends on the use conditions.		Circular Econo	Secondary Raw Materials	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	PET has the great advantage t All marketed PET in Europe comply with Eu Information		Information		
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	all existing EFSA evaluations (EFSA evaluations are not applicable to all recycling practics as all existing EFSA eval		Economic	Public authorities	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	It should be noted that Faerc There are no validated testing guidelines to measure the effectiveness of a given functional barrier				
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	Most known "genotoxic subs EFSA assumes that all incidental contamina	Risk assesment	Social	Public health & safety and health systems	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	In line with earlier comment A long authorization process has an financial impact and or an impact on investme		Economic	Trade and investment flow	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	Please consider making a sep Requirement for the procedure for modifications of existing individual authorisations insufficiently explained				
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	General comment to the "ma The maximum 5% non-food, contact PET be Recycling (input)		Economic	Regulatory burden	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	General comment to the "ma Criterea for risk assessment have an impact on the calculation of the maximum of 5		Economic	Public authorities	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	General comment to the "ma Concerns about contamination from printing inks, and contamination with nonPE		Social	Public health & safety and health systems	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	The breakdown products originating from repeated recycling depend on the polymer, the melt temperatures us		Information		
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	It is stated here in Reference i It is in practice not feasible to know the source of the detected NIAS		Social	Public health & safety and health systems	
F2785512	Faerch Group	Company/business organisation		https://ec.europa.eu/infi	Yes		29	As explained in the Union guidance for information the Supply Chain, the declaration of compliance are intende		Information		
F2785506	essenscia	Business association	Plastic	https://ec.europa.eu/infi	YEs		30	From a regulatory consistenc FCM framework is to secure safe contact with food		Information		
F2785506	essenscia	Business association	Plastic	https://ec.europa.eu/infi	YEs		30	The waste status is not requir The authorization of recycling processes under the FCM framework borders on the		Economic	Regulatory burden	
F2785506	essenscia	Business association	Plastic	https://ec.europa.eu/infi	YEs		30	Due to the too narrow understanding of "closed loop", the proposed req	Recycling (input)	Circular Econo	secondary raw material	
F2785506	essenscia	Business association	Plastic	https://ec.europa.eu/infi	YEs		30	The development of regulato Regulatory targets have an impact at the market availability				
F2785506	essenscia	Business association	Plastic	https://ec.europa.eu/infi	YEs		30	the quality of recyclates fron the quality of recyclates from mechanical r	Recycling (use)	Circular Econo	Prodcution and Consumption	
F2785506	essenscia	Business association	Plastic	https://ec.europa.eu/infi	YEs		30	The proposed draft asks to di Concerns about diclsoing information in DoC and the concesquences of that for co		Economic	Competitiveness	
F2785161	European Bioplastics	Business association	Bioplastic	https://ec.europa.eu/infi	Maybe		31	For chemical recycling, the mass balancemethod is often applied. This means that the(chemically) recycled plast		Information		
F2785161	European Bioplastics	Business association	Bioplastic	https://ec.europa.eu/infi	Maybe		31	A closed loop system is where plastic waste iscollected and reused or recycled separatelyfrom municipal waste. I		Information		
F2785166	Cefic aisbl	Business association	Recyclers	https://ec.europa.eu/infi	Maybe		32	Chapter II: Article 4. Our reac Not clear which recycled materials count fc Targets		Circular Econo	Secondary Raw Materials	
F2785495	TotalEnergies Corbion	Business association	Bioplastic	https://ec.europa.eu/infi	No	Same as contr	33					
F2785496	PETCORE Europe	Business association	Plastic	https://ec.europa.eu/infi	No		34					
F2786592	Styrenics Circular Solutions	Business association	Plastic	https://ec.europa.eu/infi	No		35					
F2786232	IFP Energies nouvelles	Science/research		https://ec.europa.eu/infi	No		36					
F2786222	ELIPSO	Business association	Plastic	https://ec.europa.eu/infi	No	Frans	37					
F2786220	Corpus Christi Polymers LL(	Business association	Plastic	https://ec.europa.eu/info/law/better-regulation/have			38	We are pleased that the EC considers complete chemical depolymerization processes that result in monomers lis		Information		
F2786220	Corpus Christi Polymers LL(	Business association	Plastic	https://ec.europa.eu/info/law/better-regulation/have			38	Articles 26 and 27. Recyclers "competent authorities" in their territoriy are unlikely to be willing or not compe		Economic	Third and developing countries	
F2785563	SIG Combibloc Systems Gm	Buisness association	Plastic	https://ec.europa.eu/infi	Yes		39	be clear that this regulation Fulfilling recycling content quotas may be outside of the scope of FCM		Circular Econo	Production and consumption	
F2785561	Normpack	Business association		https://ec.europa.eu/infi	Yes		40	We support the draft for a ne Definitions of the different sequences in recycling are not sufficiently clear		Economic	Regulatory burden	
F2785561	Normpack	Business association		https://ec.europa.eu/infi	Yes		40	The issue with official contro clarifying obligations for importers of these Third Country		Economic	Third and developing countries	
F2785561	Normpack	Business association		https://ec.europa.eu/infi	Yes		40	"The issue with official contr Clarify how recycled plastics shall be contr Third Country		Economic	Third and developing countries	
F2785554	UNESDA Soft Drinks Europe	Business association		https://ec.europa.eu/infi	Yes		41	The suitability of collection s Exclusion of certain processes or collection schemes could indeed lead to a shortage of materials				
F2785554	UNESDA Soft Drinks Europe	Business association		https://ec.europa.eu/infi	Yes		41	While we welcome the initiative to move away from authorisations of installations, the proceduresets out many		Information		
F2785552	Pöppelmann GmbH & Co. K	Business association		https://ec.europa.eu/infi	No		42					
F2785539	Anonymous	Citizen / Consumer		https://ec.europa.eu/infi	NO		43					
F2785536	Infinitum AS	Company/business organisation		https://ec.europa.eu/infi	Maybe		44	To article 2 no 3, (3) "recycling process", (4) "recycled plastic" and (7) "plastic input". Inconsistencies between p		Information		
F2787565	Federation of Hungarian Fo	Buisness association		https://ec.europa.eu/infi	Yes		45	2. Clarification of definition\ Clarification of definition recycled plastic		Economic	Regulatory Burden	
F2787563	SRP (Syndicat français des R	Trade Union		https://ec.europa.eu/infi	Yes		46	As PRE, SRP welcomes the sc Current scope has an impact on reaching the recycling targets and further develop		Economic	Regulatory Burden	
F2787563	SRP (Syndicat français des R	Trade Union		https://ec.europa.eu/infi	Yes		46	Whole document Explanation of terms recycler, recycling process, plastic input		Information		
F2787316	Polyolefin Circular Econom	Business association		https://ec.europa.eu/infi	No		47	PCEP welcomes the Commis Comments regarding chemical recycling and virign 10/2011				
F2787135	Chemical Recycling Europe			https://ec.europa.eu/infi	Yes		48	We welcome the clarificatio Legal unclarity regarding chemical recycling				
F2786967	PepsiCo	Company/business organisation		https://ec.europa.eu/infi	Yes		49	the decontamination stages may be split amongvarious stakeholders, including across borders ofMembers State		Information		
F2786967	PepsiCo	Company/business organisation		https://ec.europa.eu/infi	Yes		49	The suitability of materials fr The exclusion of some schemes could lead to a shortage of materials.		Circular Econo	waste	
F2786957	SK chemicals	Company/business organisation		https://ec.europa.eu/infi	Yes		50	We hope for a stable supply c Provisions for authorization of non-EU recyclers are not sufficint		Economic	Third and developing countries	
F2786956	ACE - Alliance for Beverage (	Business association		https://ec.europa.eu/infi	Yes		51	Coherence with other policies food packaging, recycling and waste, e.g. t Interconnection		Economic	Regulatory Burden	
F2786956	ACE - Alliance for Beverage (	Business association		https://ec.europa.eu/infi	Yes		51	Level playing field It is impor Rules concerning recycled plastics placed c Supply non EU		Economic	Third and developing countries	
F2786947	Flexible Packaging Europe			https://ec.europa.eu/infi	yes		52	Ensure coherence with the definition of "plastic materials and articles" fc Definition		Economic	Regulatory Burden	
F2786599	Styropek	Company/business organisation		https://ec.europa.eu/infi	Yes		53	Clarify what is the competent authority for installations located outside the EU. The legislation only entails rules		Economic	Third and developing countries	
F2786599	Styropek	Company/business organisation		https://ec.europa.eu/infi	Yes		53	or recyclers outside the EU, " there are concerns about the the competence and jurisdiction of "compete		Economic	Third countries	

F2786593	Plastics Europe	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		54	In order to maintain plannin	There are no timelines for the Commission	Recycling (authorization)	**Economic**	Regulatory Burden
F2787832	FNADE (French association	Company/business organisation		https://ec.europa.eu/infi	Yes		55	But it should also not focus s	There are no requirements for the performa	Recycling (output)	**Economic**	Regulatory Burden
F2787832	FNADE (French association	Company/business organisation		https://ec.europa.eu/infi	Yes		55	We recommend developing ε	Challenge tests are used for risk assessment.		**Social**	Public health & safety and health systems
F2787591	Fachverband der Mineralöli	Company/business organisation		https://ec.europa.eu/infi	No		56					
F2787585	PET Sheet Europe	Company/business organisation		https://ec.europa.eu/infi	Yes		57	Functional barrier depends c	Different functional barriers apply for differ	Functional Barrier	**Economic**	Innovation and research
F2787586	TOMRA	Company/business organisation		https://ec.europa.eu/infi	Maybe		58	Since the intended focus of tl	Comment regarding the goal of the regulati	Policy goal	**Economic**	Regulatory Burden
F2787581	LanzaTech	Company/business organisation		https://ec.europa.eu/infi	Maybe		59	We note that complete chem	There is unclarity if exempted recycling pro	Targets	**Circular Econ**	Secondary Raw Materials
F2787578	EUROPEN	Company/business organisation		https://ec.europa.eu/infi	Yes		60	It is positive to see in Article (	Further clarification is required as to how n	NIAS	**Economic**	Regulatory Burden
F2787578	EUROPEN	Company/business organisation		https://ec.europa.eu/infi	Yes		60	The exclusion of some schem	Exclusion of certain processes or collection schemes could lead to a shortage of ma		**Circular Econ**	Secondary Raw Materials
F2787578	EUROPEN	Company/business organisation		https://ec.europa.eu/infi	Yes		60	The lack of certainty as to wh	Legal uncertainty impacts investments in the technology.		**Circular Econ**	Competition and innovation
F2787578	EUROPEN	Company/business organisation		https://ec.europa.eu/infi	Yes		60	In order to minimise the risk of authorisation bottlenecks and to maximi		Recycling (authorization)	**Economic**	Regulatory Burden
F2787576	ANEC	Company/business organisation		https://ec.europa.eu/infi	Yes		61	The text states that "recyclin	chemical recycling is challenging and there	Recycling(decontamination)	**Circular econ**	secondary raw material
F2787576	ANEC	Company/business organisation		https://ec.europa.eu/infi	Yes		61	The proposal also refers to Re	Annex I of 10/2011 is partly outdated and needs more systematic review			
F2787576	ANEC	Company/business organisation		https://ec.europa.eu/infi	Yes		61	The proposal also refers to Re	There is no an expiry or revision date for all authorisations			
F2787575	Lebensmittelverband Deuts	Company/business organisation		https://ec.europa.eu/infi	Yes		62	Wir finden es positiv, dass das	Problem der unbeabsichtigten Verunreinig	NIAS	**Economic**	Regulatory burden
F2787575	Lebensmittelverband Deuts	Company/business organisation		https://ec.europa.eu/infi	Yes		62	Für Länder, in denen Kunststo	The WFD leaves room for regional application			
F2787574	ChemSec	Company/business organisation		https://ec.europa.eu/infi	Yes		63	It is likely to assume that the	There is not sufficient data regarding the environmental footprint of non-mechanic		**Environment**	Environment
F2787574	ChemSec	Company/business organisation		https://ec.europa.eu/infi	Yes		63	It is likely to assume that the	There is not sufficient data regarding the potential to remove hazardous chemicals		**Social**	Public health & safety and health systems
F2787574	ChemSec	Company/business organisation		https://ec.europa.eu/infi	Yes		63	In principle, the technologie	Not all recycling technologies are yet commercially available at scale		**Economic**	Innovation and research
F2787574	ChemSec	Company/business organisation		https://ec.europa.eu/infi	Yes		63	In principle, the technologie	There are no regulations regarding the indic	Mass balance	**Economic**	Regulatory burden
F2787574	ChemSec	Company/business organisation		https://ec.europa.eu/infi	Yes		63	In order to reach "100% recy	Concerns about the calculation of recycled content and the indication of recycled		**Circular Econ**	Production and consumption
F2787572	Federalimentare - Italian Fo	Company/business organisation		https://ec.europa.eu/infi	Yes		64	The scope of the regulation sl	The definition of recycled pastic excludes full depolymerisation impact the status c		**Circular Econ**	Secondary Raw Materials
F2787572	Federalimentare - Italian Fo	Company/business organisation		https://ec.europa.eu/infi	Yes		64	In addition, sooner than late	There needs to be more regulatory clarity on aspects of nonintentionally added sul		**Economic**	Regulatory burden
F2787854	Food Packaging Forum	Science / Academica		https://ec.europa.eu/infi	Yes		65	However, there is a direct conflict between the goals of the Circular Economy (namely, to reduce theenvironmer			**Social**	Public health & safety and health systems
F2787854	Food Packaging Forum	Science / Academica		https://ec.europa.eu/infi	Yes		65	Plastic FCMs always contain ı	The risk management of NIAS is legally mandated (EU 10/2011, Art. 19) but there is		**Economic**	Regulatory burden
F2787854	Food Packaging Forum	Science / Academica		https://ec.europa.eu/infi	Yes		65	Various hazardous chemicals	Regulation does not address how to anticipate / deal with legacy substances. This i		**Economic**	Regulatory burden
F2787854	Food Packaging Forum	Science / Academica		https://ec.europa.eu/infi	Yes		65	Levels of hazardous chemical	Concerns about NIAS loopholes		**Economic**	Regulatory burden
F2787854	Food Packaging Forum	Science / Academica		https://ec.europa.eu/infi	Yes		65	Single-use plastic food packa	Recycling is contradictory to the EU's waste hierarchy		**Circular Econ**	Waste
F2787854	Food Packaging Forum	Science / Academica		https://ec.europa.eu/infi	Yes		65	It will also not significantly r	The overall consumption of virgin plastic will nto decrease because virgin plastics a		**Circular Econ**	Primary materials
F2787848	British Plastics Federation	Company/business organisation		https://ec.europa.eu/infi	Yes		66	Clarification is required as to Scope of 10/2011 is not sufficiently clear regarding chemical recycling			**Economic**	Regulatory burden
F2787848	British Plastics Federation	Company/business organisation		https://ec.europa.eu/infi	Yes		66	It is important to recognise a	Not all the steps of recycling necessarily take place in the same location. That shoul		**Information**	
F2787848	British Plastics Federation	Company/business organisation		https://ec.europa.eu/infi	Yes		66	Also, since this Regulation repeals Regulation (EC) No 282/2008, it is paramount that	Regulation (EU) 10/2011 cl		**Circular Econ**	Seecodary Raw materials
F2787848	British Plastics Federation	Company/business organisation		https://ec.europa.eu/infi	Yes		66	The industry already ensures that the use of barriers is safe for the recycle		Functionnal barrier		
F2790476	Pyrowave	Business association		https://ec.europa.eu/infi	Yes		67	Output quality: to maximise	The regulation is outputed focuses		**social**	Public
F2790470	Schwarz Gruppe	Business association		https://ec.europa.eu/infi	Yes		68	Gerade Verfahren des chemis	Chemical recycling is not recognised by EFSA		**Economic**	regulatory burden
F2790470	Schwarz Gruppe	Business association		https://ec.europa.eu/infi	Yes		68	Bisher dürfen nur solche PET-	The 5% non-food criterium is scientifically outdated		**Economic**	Innovation and research
F2790466	lms consulting on behalf of	Starlinger		https://ec.europa.eu/infi	No		69	No				
F2790465	Braskem Netherlands B.V.	Company/business organisation		https://ec.europa.eu/infi	Yes		70	Commission Regulation (EC)	Regulation (EU) No 10/2011 is not capable of covering future recycling technologie		**Economic**	regulatory burden
F2788811	Gustaaf Bos	Company/business organisation		https://ec.europa.eu/infi	Yes	Also contribu	71	In order to avoid confusion v	There is no seperation between recycled materials and recycled materials for food c		**Economic**	regulatory burden
F2788770	Anonymous	Citizen / Consumer		https://ec.europa.eu/infi	No		72					
F2788769	Anonymous	Citizen / Consumer		https://ec.europa.eu/infi	No		73					
F2788768	CPME	Company/business organisation		https://ec.europa.eu/infi	Yes	Also contribu	74	Latterly (since 2008) the app	slow authorization added significant day to Recycling (authorization)		**Economic**	Innovation and research
F2788767	Morssinkhof Rymoplast	Company/business organisation		https://ec.europa.eu/infi	Yes		75	In practice based on the proc	most of the collected food packaging in Eur	Waste management	**Circular Econ**	Waste management
F2788767	Morssinkhof Rymoplast	Company/business organisation		https://ec.europa.eu/infi	Yes		75	In practice based on the proc	A narrow interpretation of closed loop systems woudl impact the availability of su		**Circular Econ**	Secondary Raw Materials
F2788767	Morssinkhof Rymoplast	Company/business organisation		https://ec.europa.eu/infi	Yes		75	To conclude: the actual way (	The actual way of collection could potentia	Collection	**Circular Econ**	Waste management
F2788762	Zero Waste Europe	NGO		https://ec.europa.eu/infi	Yes		76	While the EU has clearly pror	Recycling have the risk of reintroducing banned chemicals into FCM		**Social**	Public health & safety and health systems
F2788762	Zero Waste Europe	NGO		https://ec.europa.eu/infi	Yes		76	While the EU has clearly pror	The Packaging &Packaging Waste Directive has the mandate of defininng concepts		**Economic**	Regulatory Burden
F2788760	UNIONPLAST	Converter		https://ec.europa.eu/infi	Yes		77	Comments: There is not a def	How is the 5% PCW calculated. Bales or on	Waste	**Circular Econ**	Waste management
F2788753	Greiner Packaging Internati	Company/business organisation		https://ec.europa.eu/infi	No		78					
F2788752	Siegwerk Druckfarben AG &	Co. KGaA		https://ec.europa.eu/infi	No		79					
F2788751	TILISCO GmbH	Company/business organisation		https://ec.europa.eu/infi	Maybe		80	Die Erfahrung der letzten Jah	Input material and sorting flow decides on the quality and the simple and safe rep		**Economic**	Innovation and research
F2788751	TILISCO GmbH	Company/business organisation		https://ec.europa.eu/infi	Maybe		80	Gleichzeitig sollten auch für	The requirements for the functionla barrier are not sufficient for example regarding		**Economic**	Regulatory Burden
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	Recital 8: "Closed loop recycling"	We would recommend using the same definition of "closed loop recycling" as		**Economic**	Regulatory Burden
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	Overall, we consider that a far greater degree of clarity is required in laying down the technologiesthat are withir			**Economic**	Regulatory Burden
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	The definition of 'recycled material' should be consistent across all relevant EU legislation			**Economic**	Regulatory Burden
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	Overall, the final Regulation needs to much clearer as to whether both recycling technologies andrecycling proc			**Economic**	Regulatory burden
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	Furtherclarification is requir	There is no unified risk identification and risk assessment for all FCMs in th		**Economic**	Regulatory burden
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	It would be helpful to align with ISO 14021 definitions and include pre-consumer waste (post-industrial) enteri			**Economic**	Regulatory burden
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	More than one legal entity can be part of the recycling which looks more realistic in therecycling industry today			**Circular Econ**	Waste management
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	The suitability of collection s	The exclusion of certain input materials, collection and sorting schemes and or tec		**Circular Econ**	Waste management
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	Also, in the best-case scenario, the whole authorization process for novel technologies will last twoyears, and in			**Economic**	Competition
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	In order to minimize the risk	A time limit is urgently needed. A deadline should be established for the Co		**Economic**	Competition and innovation
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	In order to avoid companies operating with decontamination processes that are modified comparedto the initia			**Circular Econ**	Secondary Raw Materials
F2788749	Natural Mineral Waters Eur	Company/business organisation		https://ec.europa.eu/infi	Yes		81	A legitimate question would	The requirements for plastics containing recycled materials and articles sho		**Economic**	Regulatory Burden
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	The Commission should confirm that surrogate contaminant challenge testing is an acceptable means of determ			**Economic**	Innovation and research
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Article 10-13 – Proposal should explicitly permit novel technologies to develop supporting data under a pilot- o			**Economic**	Innovation and research
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Articles 15(1) and 19(1) –A deadline should be established for the Commission's decisions on novel technologies			**Economic**	Competition and innovation
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Articles 26 and 27 – For recycled products manufactured outside the EU, the "competent authority" will likely b			**Economic**	Third and developing countries
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	In rejecting EFSA applications for glycolysis processes, EFSA stated that monomers and oligomers resulting from			**Economic**	Regulatory Burden
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	The process for adding a recy	Recyling process in amednment will lead to regulatory burdens		**Economic**	Regulatory Burden
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Due to the nature of recycled	Waste management operators, recyclers, converters or packaging producer		**Circular Econ**	Waste management
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Thus, it is clear that the plast	The new framework should recognize the waste management and sorting r		**Circular Econ**	Waste management
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Practically, recyclers have th	The new framework should recognize the waste management and sorting r		**Circular Econ**	Waste management
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	The process to develop and obtain partner waste collection operators, pre-processors, and recyclers using the nc			**Economic**	Innovation and research
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Some recycling technologies	Data gathered during the demonstration phase should be used / allowed to		**Economic**	Innovation and research

F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Conducting analysis of each I	Contamination testing and analysis requires sufficient equipment and qual	Economic	Compliance cost
F2788747	The Plastics Industry Associ	Business association		https://ec.europa.eu/infi	Yes		82	Guidance should be provide	There is no unified risk identification and risk assessment for all FCMs in th	Economic	Regulatory Burden
F2788190	Extended Producer Respon	Business association		https://ec.europa.eu/infi	Yes		83	In particular, we welcome the changes designed to facilitate the authorisation of recyclingprocesses and the inc		Economic	Regulatory Burden
F2787857	FEAD - European Waste Mar	Business association		https://ec.europa.eu/infi	Yes		84	However, FEAD believes that	The regulation should focus on the final decontamination performance (migration	Economic	Regulatory Burden
F2787857	FEAD - European Waste Mar	Business association		https://ec.europa.eu/infi	Yes		84	In relation to the required qu	It is unclear which actors of the waste management system should be audited.	Economic	Public authorities
F2787857	FEAD - European Waste Mar	Business association		https://ec.europa.eu/infi	Yes		84	Further guidance is needed o	Not enough guidance regarding contaminants in FCM	Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	This revision should foster innovation and ensure that the right infrastructure and technologies are in place.Mor		Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	The revision should ensure th	Efficient and appropriate waste management, waste sorting and recycling i	Circular Econo	Waste management
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	At the same time, we would like to emphasise that formal authorisation of a large number of recycling processes		Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	The scope of the regulation stipulates that the type of recycling technologies leading tosubstances in the Union I		Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	We interpret from this draft t	Without the inclusion of chemical recycling technology, there is currently no path	Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	In addition, sooner than later, we will need further regulatory clarity on aspects of nonintentionally added subs		Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	To confirm what type of cher	The scope of 10/2011 is not sufficiently clear regarding chemical recycling	Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	We note that the definition '	Defintion of plastic materials and articles is not sufficiently clear	Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	Regarding the monitoring an	Disproportionate requirements difficult to fulfil might become an obstacle to brir	Economic	Innovation and research
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	Indeed, the capacity of deco	Any strict restriction for example the use of non-food material would again hinder	Economic	Innovation and research
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	Therefore, a requirement like	Data gathered during the demonstration phase should be used / allowed to use for	Economic	Innovation and research
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	Although thoroughly thought through, the procedure for the authorisation of individual recycling processes loc		Economic	Regulatory Burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	As previously mentioned, we	Batches can vary from one and another	Economic	Information and Communication technologies / Regulatory burden
F2787856	FoodDrinkEurope	Business association		https://ec.europa.eu/infi	Yes		85	As previously mentioned, we	A template for sharing information can be to rigid or not sufficiently practical in all	Economic	Information and Communication technologies / Regulatory burden
F2787833	CO.N.I.P.	Company/business organisation		https://ec.europa.eu/infi	No	Italian	86				
F2787836	Skymark Packaging Internat	Company/business organisation		https://ec.europa.eu/infi	Yes		87	Clarification is required as to	The scope of 10/2011 is not sufficiently clear regarding chemical recycling	Economic	Regulatory Burden
F2787836	Skymark Packaging Internat	Company/business organisation		https://ec.europa.eu/infi	Yes		87	The definition of 'recycled pl	Align defintions within the FCM	Economic	Regulatory Burden
F2787838	European Recycling Industr	Company/business organisation		https://ec.europa.eu/infi	Yes		88	Sufficient time should be gra	The new framework should have a sufficient adaption period	Economic	Regulatory Burden
F2787841	Südpack Verpackungen Gm	Company/business organisation		https://ec.europa.eu/infi	Yes		89	Für Südpack ist es wichtig, au	the quality of recyclates from mechanical recycling is not sufficient for many applic	Circular Econo	Prodcution and Consumption
F2787841	Südpack Verpackungen Gm	Company/business organisation		https://ec.europa.eu/infi	Yes		89	Der Vorschlag im Annex, dass	The 5% non-food criterium is scientifically outdated	Economic	Innovation and research
F2787842	BDE Bundesverband der De	Company/business organisation		https://ec.europa.eu/infi	Yes		90	We welcome the proposal to	A time limit is urgently needed	Economic	Competition and innovation
F2787842	BDE Bundesverband der De	Company/business organisation		https://ec.europa.eu/infi	Yes		90	The current lead time for the	The long authorization procedure for (novel) recyclng technologies has negative co	Economic	Competition and innovation
F2787847	Anonymous	Citizen / Consumer		https://ec.europa.eu/infi	Maybe		91	Within Europe it can be assu	Externally sourced waste food-contact plastic is not necessarily produced in accor	Economic	Third and developing countries
F2787847	Anonymous	Citizen / Consumer		https://ec.europa.eu/infi	Maybe		91	In addition, any market area	Regulatory development outside the EU have impact on the available plastic input	Economic	Third and developing countries
F2787843	Rethink Plastic alliance (NG	NGO		https://ec.europa.eu/infi	Yes		92	Scientific evidence shows tha	Concerns about hazardous substances in recycled material	Social	Public Health and Safety
F2787843	Rethink Plastic alliance (NG	NGO		https://ec.europa.eu/infi	Yes		92	while chemical mixtures hav	Unwanted chemicals can enter be present in packaging due to loopholes regarding	Social	Public health & safety and health systems
F2787843	Rethink Plastic alliance (NG	NGO		https://ec.europa.eu/infi	Yes		92	Finally, the draft regulation c	Regulation for recycled plastics should not be drafted in isolation	Circular Econo	Circular Regulation
F2787843	Rethink Plastic alliance (NG	NGO		https://ec.europa.eu/infi	Yes		92	We also regret that the quest	The FCM focuses on regulating input material but the effect of mixtures of chemica	Social	Public health & safety and health systems
F2787844	ALPLA Werke Alwin Lehner	Company/business organisati	Plastic	https://ec.europa.eu/infi	Yes		93	Most of hazardous substance	There is no clear and coherent framework for design for recycling or unwanted NIAS	Circular econo	Production and consumption
F2764266	Swedish Plastic Recycling	Recycler	Plastic	https://ec.europa.eu/infi	Yes		94	Article 6 § 3 requires traceab	Starting point for traceability is unclear in t	Traceability	Economic	Information and Communication technologies / Regulatory burden
F2788750	VEOLIA	Company/business organisation		https://ec.europa.eu/infi	Yes		95	The scope of what a recycler	The scope of the reommendation should follow / adhere to the reality of the recycl	Economic	Regulatory Burden
F2788750	VEOLIA	Company/business organisation		https://ec.europa.eu/infi	Yes		95	It is not uncommon for Euro	Plastic Waste can be sources from outside the EU. Rules should be able to met by TI	Economic	Third and developing countries

Annex 4 PGRSI Framework

GPRSI cycle	Main Indicator	Sub Indicator	Specific Ciruclar Indicator	FCM Category	State	Source (not limited to)
Pressure: use of SRM in FCM	**Circular Economy**	Waste management	Waste management	Recycling (input)	Plastic packaging waste may contain residues from previous use, contaminants from misuse and contaminants from non-authorised substances.	R. 282/2008 provision (4)
	Circular Economy	Waste management	Waste management	Recycling (input)	The to be recycled material input can contain hazardous / unwanted substances from different contamination sources including migration during waste management	#53 C#6, D#25, D#66, Matthews (et.al, 20210
	Circular Economy	Waste management	Waste management	Recycling (input)	The to be recycled material input can contain hazardous / unwanted substances that are no longer allowed in current food contact materials (legacy substances)	D#66
	Circular Economy	Waste management	Waste management	Recycling (input)	It is currently impossible to know all the type of contaminations in the recycling input	R. 282/2008
	Circular Economy	Competition and innovation	Competition and innovation	Recyclate use	Recovered material must be able to compete in quality and price	
	Economic	Education, traning and skills		Recyclate use	The use of (recycled) materials as FCMs requires an in depth understanding of material properties, contamination sources and regulatory requirements	D#65
	Society	Public health & safety and health systems	Secondary Raw Materials	NIAS and IAS	SRM and or FCM containing recycled materials can contain hazardous / unwanted substances	#53 C#6, D#25, Geueke et al, 2018
	Society	Public health & safety and health systems	Secondary Raw Materials	NIAS and IAS	Levels of hazardous chemicals increase in recycled plastics, especially in polyolefins but also in polyethylene terephthalate plastics (PET).	Geueke (et al 2018)
Pressure:other	**Society**	Public health & safety and health systems		Intended use	Incorrect use of FCM causes safety concerns	IA #44
	Society	Public health & safety and health systems		Intended use	There are sensitive populations, such as pregnant women and children that are exposed to FCM. Chemicals have effects at low levels on young children, but they also cross the placenta and affect the developing fetus	IA #12, IA #13
	Environment	Environment		NIAS and IAS	Hazardous substances can impose a risk to the environment	
	Society	Public health & safety and health systems		NIAS and IAS	FCM/A can contain (hazardous) unwanted substances	IA #23, IA#44 , Geueke and Muncke, 2017
	Society	Public health & safety and health systems		Migration data & testing	FCM/A can migrate substances into food products	IA #44
	Society	Public health & safety and health systems	Secondary Raw Materials	NIAS and IAS	Materials from natural origin (bio-based) can contain (hazardous) unwanted substances such as pesticides and toxic chemicals	IA#8, IA #22, IA#56
	Society	Public health & safety and health systems		NIAS and IAS	Not all chemicals have safe exposure levels as some chemicals such as (mutagens, carcinogens, endocrine disrupters) have effects at low levels	IA #13
	Economic	Innovation and research		Intended use	FCM materials can have limits in terms of food application such as temperature (microwave), time, but also acid or fat in the	IA #50, IA #44
	Circular Economy	Waste management	Waste management	Waste	PET and HDPE (together with low density polyethylene (LDPE) make up 40% and 22% of the total plastic waste collected from kerbside collection	Franz & Welle (2022)
	Circular Economy	Secondary Raw Material	Secondary Raw Material	Recycling (general)	Mechanical recycling holds limitation regarding recycling multi-material multilayer plastic packaging waste	(Soares et al., 2022)
	Circular Economy	Innovation and research	Primary Raw materials	NIAS and IAS	HDPE has a higher risk of absorbing (non-polar) chemical contaminant and subsequent migration into FCM due to non-polar characteristic and high diffusivity then PET	De Tandt (2021); Franz & Welle (2022)
	Circular Economy	Secondary Raw Material	Secondary Raw Material	Recycling (general)	Paper and plastics hold technical limitations to their recycling. This affect the actual possibility of repeated recycling	D#29; Grosso (et al., 2017).
	Economic	Innovation and research	Competition and innovation	Recycling (plant)	The development in (chemical) Recycling plants requires high financial resources/ investments	D#16
	Economic	Third country	Production & consumption	Value chain	Recyclates can be produced outside of the EU	
Driver	**Society**	Public health & safety and health systems			Ensure safety	R. 1935/2004
	Society	Public health & safety and health systems			Ensure protection of human health	R.178/2002, R. 1935/2004, R.1907/2006 R. 1169/2011, R. 2017/625 , COM (2020) 667
	Society	Public health & safety and health systems	Secondary Raw Material		Ensure the safety of the recycled plastics	R. 282/2008
	Society	Public health & safety and health systems	Secondary Raw Material		Minimize the presence of substances of concern in recycled materials and articles	COM(2020) 98
	Environment	Environment			Protection of the environment	R. 1907/2006
	Circular Economy	Secondary Raw Material	Secondary Raw Materials	Design	Increase the uptake of recycled content in beverage bottles by 2030	D. 2019/904
	Environment	Environment	Waste management		Prevent and reduce the generation of (packaging) waste and the impacts on the environment	D. 2008/98 & D. 94/62
	Environment	Environment	Waste management		Prevent and reduce the impact of certain plastic products on the environment	D. 2019/904
	Environment	Environment			Reduce the environmental footprint	COM(2020) 381
	Society	Consumer			Protection of the interests of consumers	R.178/2002, R. 1935/2004, R. 1169/2011 R. 2017/625
	Economic	Functioning of the Internal Market			Ensure effective functioning of the internal market	R. 1935/2004
	Economic	Functioning of the Internal Market			Ensure fair practices and trade	R. 2017/625
	Economic	Functioning of the Internal Market			Ensure free movement of food	R.178/2002,
	Economic	Functioning of the Internal Market			Ensure free movement of substances	R. 1907/2006
	Economic	Innovation and research & Competitiveness			Enhance competitiveness and innovation	R. 1907/2006
	Circular Economy	Circular Economy	Circular Economy		Improve efficiency of resources	D. 2008/98
	Circular Economy	Circular Economy	Secondary Raw Material		Increase the uptake of recycled content in beverage bottles by 2030	D. 2019/904
	Economic	Innovation and research			Take into account important technological developments in the area of food packaging	
	Circular Economy	Circular Economy	Circular Economy		The use of recycled materials and articles should be favored in the Community for environmental reasons, provided that strict requirements are established to ensure food safety and consumer protection	R. 1935/2004 Provision (24)
	Circular Economy	Circular Economy	Circular Economy		Harmonization of rules on recycled plastic material and articles should be given priority	R. 1935/2004 Provision (24)
European Regulatory State	**R. 1935/2004**				Regulation for materials and articles that in their finished state are intended to brought into contact with food	
				Harmonization	Specific measures for (recycled) materials and articles that are used in the manufacturing of listed materials and articles (*1.Active and intelligent materials and articles 2. Adhesives 3. Ceramics 4. Cork 5. Rubbers 6. Glass 7. Ion-exchange resins 8. Metals and alloys 9. Paper and board 10. Plastics 11. Printing inks 12. Regenerated cellulose 13. Silicones 14. Textiles 15. Varnishes and coatings 16. Waxes 17. Wood) can be adopted on EU level*	R. 1935/2004
				Harmonization	1. Active and intelligent materials and articles 10. (recycled) Plastics , 12. Regenerated cellulose from Annex 1 are harmonized on EU level	
				Non-harmonization	Member states can adopt measures for (recycled) materials and articles that are used in the manufacturing of listed materials and articles (1.Active and intelligent materials and articles 2. Adhesives 3. Ceramics 4. Cork 5. Rubbers 6. Glass 7. Ion-exchange resins 8. Metals and alloys 9. Paper and board 10. Plastics 11. Printing inks 12. Regenerated cellulose 13. Silicones 14. Textiles 15. Varnishes and coatings 16. Waxes 17. Wood) in case of non-harmonization	R. 1935/2004
	R. 262/2006			GMP	Rules on good manufacturing practice for groups of materials and articles intended to come into contact with food listed in Annex I to Regulation (EC) No 1935/2004 and combinations of those materials and articles or recycled materials and articles used in those materials and articles.	
	R. 10/2011				Regulation for plastic materials and articles which are intended to come into contact with foodstuffs.	
				Migration-limits	The generic detection limit is defined at 0,01 mg/kg	R. 10/2011 art 11.4
				Migration-limits	An overall migration limit (OML) of 60 mg/kg food applies	
				Migration-limits	specific migration limits (SMLs) and/or other restrictions apply to certain substances	
				NIAS	NIAS as substances not specifically included in the Union list may be present in plastics	R. 10/2011 art. 6
				NIAS	NIAS "means an impurity in the substances used or a reaction intermediate formed during the production process or a decomposition or reaction product"	R. 10/2011 art. 3.9
	R. 282/2008				Regulation on the use of post-consumer polymers in direct contact with food	
				Scope	The regulation covers mechanical recycling of polymers only.	R.282/2008 art.1

				Functional barrier (scope)	Recycled plastic materials and articles in which the recycled plastic is used behind a functional plastic barrier are excluded from the scope of Regulation 282/2008	
				Safety Evaluation: Guidance	EFSA has to publish before the end of 2008 guidelines for the safety assessment of a recycling process which specifies	R.282/2008 art.5
Member State & Industry Response				Non-harmonization	MS havea adopted National measures on DoCs	
				Non-harmonization	MS havea adopted National measures on paper and board	E#103
				Non-harmonization	MS havea adopted National measures on substances	
			Secondary Raw Material	Non-harmonization	MS havea adopted National measures on recycled plastic	
					The regulaton and safety of FCM is based on migration and risk assesment	
Regulatory Framework	**R. 1935/2004**					
	Society	Public health & safety and health systems		Safety	FCM/A should not release constituents into food at levels harmful to human health	R. 1935/2004 Art 3
				Safety	FCM/A should not change the composition of food, taste, and odour in an unacceptable way.	R. 1935/2004 Art 3
				Migration data & testing	The regulaton and safety of FCM is based on migration and risk assesment	IA#7
				Non-harmonization	Paper and board (9) are not harmonized on EU level	E#25, E#103, Franz & Welle (2022)
				Non-harmonization	Recycled Paper and board (9) are not harmonized on EU level	E#25, Franz & Welle (2022)
	R. 262/2006					
	R. 10/2011					
				Definition	Plastic materials made from bio-based monomers are "plastics" following the definition of Regulation 10/2011 on plastic materials and articles intended to come into contact with food.	IA#48
				Migration-limits	The SML and the OML do apply to plastic multilayers but do not apply to plastics in multimaterial multilayers.	R. 10/2011 art 13 & 14
				Functional barrier (substances)	Non-authorised / Non-listed substances may be used behind a functional barrier in (plastic) multilayer material, with the exception of substances classified as 'mutagenic', 'carcinogenic' or 'toxic to reproduction' and substances in nanoform.	
				Functional barrier (migration)	The maximum migration of a non-authorized substance through a functional barrier is 0.01 mg/kg of food	Franz & Welle (2022)
				Functional barrier (recyaltee	Recycled material could be utilised in food packaging behind a layer manufactured from virgin materials (functional barrier)	Matthews, et al, 2021
				Risk assesment	Industry has to onducting risk self-assessments for non-evaluated substances	
	R. 282/2008					
	Economic	Public authorities	Secondary Raw Materials	Recycling (safety evaluation)	In 2008 EFSA published Guidelines on submission of a dossier for safety evaluation by the EFSA of a recycling process to produ	EFSA J. 2008, 717
	Economic	Public authorities	Secondary Raw Materials	Recycling (safety evaluation)	EFSA published a Scientific Opinion on the criteria to be used for safety evaluation of a mechanical recycling process to produce	EFSA J. 2011, 9, 2184.
	Society	Public health & safety and health systems	Waste management	Recycling (input)	There is a lack of knowledge about the composition of the recycling input / waste stream	E#46
	Circular Economy	Regulation	Waste management	Recycling (input)	The non-food fraction in the recycling input should not exceed 5% of the input material in the case of PET, and 1% in the case of HDPE	Franz & Welle (2022), EFSA J. 2011, 9, 2184.
State	**Framework**					
	Society	Public health & safety and health systems		Instrument	The FCM framework does not efficiently address research findings	E#63
	Economic	Regulatory burdens pressure		overview	There is no harmonized list of substances which can be used in FCM/A	E#138
	Economic	Regulatory burdens pressure		Framework	The existing EU regulatory system is complex and difficult to fully comprehend for specialists and the typical SME.	E#81, E#347, IA#10
	Economic	Regulatory burdens pressure		Framework	Lack of translating guidance into the different languages of use.	E#146
	Economic	Innovation and research		Migration data & testing	Migration assesment does not take into account mixing effects	IA #1, IA44, D#92
	Economic	Innovation and research		Migration data & testing	There is lack of knowledge and data that is needed for risk assesment: for example lack of available toxicity and exposure infor	IA #53
	Economic	Compliance costs		Migration data & testing	Resources are required to keep up to date with scientific knowledge	IA #62
	Economic	Innovation and research		Migration data & testing	There is a lack of methods to establish migration limits. Current methods of sampling and analysis are not sufficiently standardi	IA #57
	Economic	Innovation and research		Migration data & testing	There is an absence of reliable data on migration of FCM	IA #1
	Economic	Compliance costs		Migration data & testing	Laboratory tests, contamination testing and analysis and risk assesment requires sufficient equipment and resources such as qu	D#82
	Economic	Compliance costs		Migration data & testing	There is not enough competent third-party lab capacity to conduct NIAS / contamination testing and analysis in Europe	D #16, D#82
	Economic	Innovation and research		Risk assesment	Lack of available toxicity and exposure information for substances / FCM	IA#53, Geueke & Muncke (2018)
	Economic	Functioning of the Internal Market		Value chain	There are different actors in the value chain	
	Economic	Functioning of the internal market and competition		Value chain	The FCM supply chain is complex and lengthy	Simoneau et al. 2016
	Economic	Conduct of SME's		Value chain	Final article producers are often SMEs	
	Economic	Third Countries		Value chain	FCMs and (recycled) raw materials are imported from non-EU countries.	IA#61, Simoneau et al. 2016
	Economic	SME		Migration data & testing	SME's dont have sufficient resources to develop robust methods to confirm safety per Article 3, perform calculation and migrati	IA#2, IA #27, IA # 30 #57, IA#62
	Economic	Regulatory Burden	Production and consumption	Recycling (use)	There is insufficient guidance how to use recycled plastics	IA#6
	R. 1935/2004					
	Environment	Environment		Aim	The current EU framework does not address the environment	x
	Economic	Regulatory burdens pressure		Safety	There is a lack of harmonized risk-assessment guidance documents, principles / safety compliance guidance specifically regarding NIAS, non-evaluated substances and non-harmonzied materials	E#1, E#125, E#138, E#164, E#347, IA#46
	Economic	Regulatory burdens pressure		Safety	It is uncler how safety should be ensured.	E#1
	Economic	Regulatory Burden		Safety	The scope of article 3 is not sufficiently clear	E#156
	Social	Public health & safety and health systems		Safety	The final responsibility for the safety generally remains with the last participant in the supply chain, which is often the food business operator according to Article 19 of the GFL	Geueke & Muncke (2018)
	Economic	Regulatory Burden		Safety	Detailed guidance on how to assess the safety, do risk assessment or show compliance to article 3 of recycled materials are missing	
	Economic	Regulatory Burden		Safety	It is not sufficiently clear how to assess the substances used in non-harmonized FCM materials/sectors to ensure that they are	IA #27
	Economic	Regulatory burdens pressure		Forseeable use	Foreseeable use is not properly defined	E#156
	Social	Public health & safety and health systems		Intended use	The instruction for clean and appropriate use are not sufficienlty armonized for example hygienic requirements for repeated use	E#156
	Circular Economy	Production and consumption		Intended use	The scope of 'intended use' does not explicitly include reuse, recycling and safe disposal.	E#94
	Society	Public health & safety and health systems		Intended use	The concept of 'intended use' implies that products are only safe if they are used as intended by the manufacturer	IA #44
	Economic	Compliance costs		Migration data & testing	There is no unified risk identification and risk assessment for all FCMs (for example also non-harmonized subtances) in the Euro	IA #20, IA #24 # 44 #46 D#85, D83, D#81, Simoneau et al 2016
	Economic	Innovation and research		Migration data & testing	Compliance regarding contaminants from recycled PET cannot be verified by means of analytical measurements.	D#29
	Economic	Regulatory burdens pressure		Risk assesment	Risk assesment of substances and the establishment of migration limits can be based on overestimation	E#127
	Economic	Innovation and research		Migration data & testing	The ability to identify and quantify substances, establish migration of substances and adverse health affects is required for risk assesment	
	Economic	Regulatory burdens pressure		Non-harmonization	National rules can be difficult to access	E#1
	Economic	Regulatory burdens pressure		Non-harmonization	National rules are not always consistently structured or sufficiently detailed. Specifically regarding Good Manufacturing Practise (GMP) and the declaration of compliance (DoC)	E#1
	Economic	Regulatory burdens pressure		Non-harmonization	National rules can be outdated	E#53
	Economic	Regulatory burdens pressure		Non-harmonization	Substances, materials and articles are fragmented regulated in MS and EU regulations	E#132
	Economic	Functioning of the Internal Market		Non-harmonization: mutual recognition	The application of mutual recognition is not working sufficiently	E#17, E#75, E#188,IA # 22, IA #38, IA,39, IA#41

	Economic	Information and Communication technologies		information & Traceability	There is a lack of (transfer) (of detailed) (transparent) information in the supply chain, specifically regarding risk assessment of substances not evaluated by EFSA	E#76, IA#49
	Economic	Information and Communication technologies		Traceability	Quality, accessibility and reliability of data in the supply chain of FCM is not sufficient // the transfer of safety-related information from one actor to the next in the manufacturing chains presents flaw	E#1, IA #24, IA #36
	Economic	Information and Communication technologies		Traceability	There is insufficient reliable and qualtiy communications along the supply chain	IA#2
	Economic	Regulatory Burden		DoC	Doc is not standardized for all FCM, thus also not required for all FCM containing secondary raw materials such as paper and bo	IA, #3, IA#4, IA#5, #11 #23, #24
	Economic	Compliance costs		DoC	There is a lack of DoC requirements (for non-harmonised materials) nor guidance on their content.	E#125, E#174 E#239, E#347,
	Economic	Compliance costs		DoC	Risk assessments, scientific evidence, migration test results and other supporting documents are not part of the DoC	
	Economic	Regulatory Burden		DOC	DoC does not contain all the necessary information: The DoC does not contain sufficient information on NLS and NIAS,	E#125, E#174 E#239, E#347, IA#48
	Economic	Functioning of the Internal Market		DoC	DoCs are not required in all Member states	E#138, E#241
		Public health & safety and health systems	Production and consumption	Labelling	There is no coherent labelling scheme or usage information that facilitate the proper intended use of FCM by consumers.	IA #44, E#156
	Economic	Innovation and research	Secondary Raw Materials	Scope	New materials are not taken up in the Annex	E#35,E#120, E#142, E#145
	Economic	Innovation and research	Circular Economy	Scope	New materials are not specifically regulated	E#147
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Scope	There are no general requirement for recycled articles or materials (eg decontamination)	D#29
	Economic	Regulatory Burden	Secondary Raw Materials	Scope	There are no specific requirements or conditions for the use of bio-based materials / deriving from plant sources	IA #59
	Economic	Regulatory Burden		Scope: Multimaterial	Lack of specific measure for multimaterials involving paper and board.	E#170
	Circular Economy	Production and consumption	Production and consumption	scope: Design	The FCM framework does not take the recyclability or reuse of materials into account	E#27, IA #48
	Economic	Functioning of the Internal Market	Secondary Raw Materials	Risk assesment	Authorization procedures for new materials are long and burdensome	E#145, E#347
	Economic	Operation conduct of SME's		Knowledge & Skills	There is a lack of knowledge and financial resources that enables compliance in the supply chain, specifically at SME	E#347
	R. 262/2006					
	Economic	Regulatory Burden	Secondary Raw Materials	Risk assesment	Regulation 2023/2006 does not provide enough guidance for the risk assesment of food contact materials derived from post-consumer recycled plastics	
	R. 10/2011					
	Society	Public health & safety and health systems		Instrument	the FCM framework is amended multiple times but not consolidated	
	Economic	Regulatory burdens pressure	Secondary Raw Materials	Definition: NIAS	Strictly and formalistically speaking, a PCR substance does not fall under the definition of NIAS	Franz & Welle (2022)
	Economic	Functioning of the Internal Market		Auhtorization	Authorization procedures for substances are long and burdensome	E#145, IA#5
	Economic	Innovation and research		Migration data & testing	It is technically possible to achieve lower detection limits then 10 ppb	IA#3
	Economic	Regulatory burdens pressure		Migration limit	It is for multilayer multimaterial, unclear which SML must be applied when different SML exist for the same substance in different materials part of the multilayer	E#52
	Economic	Innovation and research	Secondary Raw Materials	Migration data & testing	The current risk assesment process for both SRM and PRM is conventional and overprotective (e.g. on migration, food consum	IA #23
	Economic	Information and Communication technologies		DoC	The risk assessments performed by the industry are part of the supporting Documentation	E#347
	Economic	Innovation and research		Functional barrier	There are no validated testing guidelines to measure the effectiveness of a given functional barrier	D#29
	Economic	Regulatory burdens pressure		Functional Barrier	There is unclarity what constitutes a functional barrier	E#127
	Society	Public health & safety and health systems	Secondary Raw Materials	Functional barrier (use)	It is unclear when and which substances can be used behind a functional barrier	E#78, IA #39, D#80
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Recyling (general)	No distinction is made between virgin en recycled plastic.	Fleurke (et. Al; 2019)
	Economic	Regulatory burdens pressure	Secondary Raw Materials	Recycling (use)	There is no clear recognition that recycled polymereers produced from feedstock / chemical recycling technologies are the sam	IA #14
	Economic	Regulatory burdens pressure	Secondary Raw Materials	Scope / definition	Plastics deriveed from plant or bio-based technologies are not defined	IA #37
	Economic	Regulatory burdens pressure	Waste management	Scope	The product status of offcuts and scraps (end of life, byproduct) is not sufficienlty clear	D#29
	Economic	Regulatory burdens pressure	Secondary Raw Materials	Scope	The scope of 10/2011 (and 282/2008) is not sufficiently clear regarding requirements for monomers derived from chemical rec	D#66, D#85, D#87, D#70
	R. 282/2008					
	Economic	Regulatory Burden	Secondary Raw Materials	Scope	Chemical recycling is currently not (sufficiently) addressed or recognized in the FCM framework. There is no legal reference to	E#164, IA #40 & 42,
	Economic	Regulatory Burden	Secondary Raw Materials	Definition	The definition of recycled pastic excludes full depolymerisation.	D#64
	Economic	Regulatory Burden	Secondary Raw Materials	Definition	Unclear whether Article 3 refers to intermediate recycled articles and materials or to final article	D#17
	Economic	Regulatory Burden	Circular Economy	Scope	Theere is a lack of clear rules on safe use of recycled materials in FCMs	E#413
	Economic	Regulatory Burden	Secondary Raw Materials	Scope	The possibilities to use recycled materials in FCMs is insufficiently clear	E#127
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Scope (interconnection)	It is unclear if exempted recycling processes are able to contribute to recycling quotas and targets for recycled content.	D#59, D#32
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Scope requirements	Regulation 282/2008 does not addrress contaminants in recycled materials and articles	D#29
	Society	Public health & safety and health systems	Secondary Raw Materials	Use	there is a lack of knowledge about the impact of recycled materials	E#16
	Economic	Third Country	Secondary Raw Materials	Use	It is unclear under which conditions SRM from outside the EU can be used in FCM	
	Economic	Regulatory Burden	Waste management	Interconnection: WFD& REACH	There are no EoW criterea for Plastics	De Tandt (2021)
	Society	Public health & safety and health systems	Waste management	Recycling (input)	There is a lack of knowledge about the composition of the recycling input / waste stream	E#46
	Economic	Functioning of the internal market	Waste management	Recycling (input: Waste)	Packaging is differently collected and sorted in European countries. This is the effect of the implementation of the WFD. Most c	IA #51 D#75
	Economic	Trade and investment flow	Waste management	Recycling (input: Waste)	Investment in waste (Sorting, seperating etc) and recycling infrastructure and technology require a viable market to process the	D#82
	Economic	Functioning of the internal market	Waste management	Recycling (input: Waste)	Packaging is differently collected and sorted in European countries. This is the effect of the implementation of the WFD. Most c	IA #51 D#75
	Circular Economy	Waste management	Waste management	Recycling (input: Waste)	The composition of waste differs in quality. In post-industrial waste the composition is known, whereas in post-consumer streams of plastic waste are mixed and contaminated. Furthermore the composition is not stable and varies from batch to batch	
			Waste management	Recycling (input: Waste)	Misclassification of waste has an effect on hazardous substances and waste management costs and economic viability of recycling.	
	Economic	Innovation and research	Waste management	Recycling (input: Waste)	Sorting and seperating FCM from non-food grade plastics is challenging, even if previously used in contact with food because th	D #25, D#82
	Circular Economy	Waste management	Waste management	Recycling (input: Waste)	The packaging material or article may have beensubject to limits or specifications under Reg. No. 10/2011 (i.e., functional barri	D #25, D#82
	Circular Economy	Waste management	Waste management	Recycling (input: Waste)	Collected waste can contian plastics that was not manufactured according to Regulation 10/2011 (Non-FCM)	D#82
	Circular Economy	Waste management	Waste management	Recycling (input: Waste)	Efficient and appropriate waste management, waste sorting and recycling infrastructure and technology is required to comply t	IA #51, D#85
	Circular Economy	Waste management	Waste management	Recycling (input: Waste)	There is insufficient infrastructure to properly manage waste for recycling according to the FCM requirements	IA #51
	Circular Economy	Waste management	Waste management	Recycling (input: Waste)	There is no technologically feasible method or scientific analysis to determine whether a material in the input stream was const	De Tandt (2021)
	Economic	Regulatory Burden	Production and consumption	Recycling (input: waste)	The maximum 5% non-food contact PET becomes more and more challenging because more non-food packaging is also made	D#29
	Circular Economy	Primary Raw Materials	Primary Raw Materials	Recycling (input: supply)	All PET resin grades sold by European manufacturers and placed on the EU market are food contact approved	De Tandt (2021), EFSA J. 2011, 9, 2184.
	Economic	Third Countries	Production and consumption	Recycling (input: supply)	PET resins not originating from Europe of the USA are not always constructed for food contact use	EFSA J. 2011, 9, 2184.
	Circular Economy	Waste management	Waste management	Recycling (input: supply)	Bottles made from PET have mostly been (Food Contact) beverages bottle. Bottles from HDPE can have been milk, juice but als	EFSA J. 2011, 9, 2184.
	Economic	Third Countries	Secondary Raw Materials	Recycling (input: supply)	Externally sourced waste food-contact plastic is not necessarily produced in accordance to European FCM standards	D#91
	Economic	Regulatory Burden	Waste management	Recycling (input: supply)	The definition of 'plastic input' limits the input into the recycling to decontamination of post-consumer waste.	D#18
	Economic	Innovation and research	Production and consumption	Recycling (input: supply	There is scarce supply of PET from deposit cycles that meets the food contact requirements	D#17
	Economic	Regulatory Burden	Waste management	Recycling (input and sorting)	EFSA applies Article 4.c rather strict and require full traceability and 95-99% sorting efficiency.	De Tandt (2021)
	Economic	Regulatory Burden	Production and consumption	Recycling (input sorting)	It is unclear how to count the allowed 5% non-food food contact materials. For example how to count te multilayers polyesters,	D#19, D#77
	Economic	Innovation and research	Production and consumption	Recycling (input: sorting)	The legally non-binding EFSA recommendation from 2011 that 5% non-food contact material is allowed in the input stream scie	D#17, D#68, D#89
	Economic	Innovation and research	Competition and innovation	Recycling (knowledge & data)	There is little knowledge about the abilities of different chemical recycling processes to eliminate substances of concern.	D#61
	Economic	Public authorities	Secondary Raw Materials	Recycling (guidance safety evaluation)	EFSA has published their evaluation criteria for PET and HDPE,	EFSA J. 2011, 9, 2184. EFSA J. 2015, 13, 4016
	Economic	Public authorities	Secondary Raw Materials	Recycling (guidance safety evaluation)	EFSA published a Scientific Opinion on the criteria to be used for safety evaluation of a mechanical recycling process to produce recycled PET intended to be used for manufacture of materials and articles in contact with food.	EFSA J. 2011, 9, 2184.
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (guidance safety evaluation)	There is limited guidance on the authorization of recycling PET in a non-bottle to bottle scenario	IA#10
	Economic	Third Countries	Secondary Raw Materials	Recycling (general process)	Requirements and obligations for recycler located in non-EU countries are not sufficiently clear // Requirements for recyclers an	IA#61, D#2, D#20, D#40
	Economic	Innovation and research	Competition and innovation	Recycling (general process)	The "general risk assessments" performed by the recycler as part of the application, cannot cover all future uses of the recyclec	D#29
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (generalprocess)	The authorization of recycling processes is long and burdensome.	D # 15, D#17
	Economic	Public authorities	Secondary Raw Materials	Recycling (process safety evaluation)	The contamination level of the input materials for recycling processes is a deciding factor	Franz & Welle (2022)
	Economic	Public authorities	Secondary Raw Materials	Recycling (process safety evaluation)	The safety evaluatio is not based on realistic exposure scenarios, realistic concentration of potential genotoxic compounds, and realistic diffusion coefficient prediction	Franz & Welle (2022)

	Economic	Public authorities	Secondary Raw Materials	Recycling (process safety evaluation)	The EFSA evaluation is mainly based on three main parameters: (i) input characteristics (concentrations contaminants in the post-consumer input materials) (ii) cleaning efficiency of the superclean recycling process, and (iii) exposure to customers	Franz & Welle (2022)
	Economic	Public authorities	Secondary Raw Materials	Recycling (process safety evaluation)	The EFSa is based on several individual steps that are later combied / multiplied	Franz & Welle (2022)
	Economic	Public authorities	Secondary Raw Materials	Recycling (process safety evaluation)	The procedure leads to a huge over-conservatism in the food safety evaluation	Franz & Welle (2022)
	Economic	Innovation and research	Secondary Raw Materials	Recycling (guidance: safety evaluation)	EFSA has (only) published evaluation criteria for PET and HDPE	IA#3, IA#46, IA#61, EFSA, Callaert (2021)
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (guidance: safety evaluation)	There is limited guidance on the authorization of recycling PET in a non-bottle to bottle scenario	IA#10
	Economic	Regulatory Burden	Waste management	Recycling (guidance safety evaluation)	The EFSA criterea do not reflect current recycling practices, such as recycling of PET trays, recycling of FCM from curbside	IA #46
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (guidance: safety evaluation)	Not all polymers are covered by the EFSA guidance documents and opinions	IA #61
	Economic	Public authorities		Enforcement and compliance	Even though EFSA is only legally allowed to give a scientific opinion on matters falling within its mission, the advices EFSA gives	KIDV + overall interpretation
	Economic	Innovation and research	Secondary Raw Materials	Recycling (data safety evaluation)	The criterea for the risk assesment are based on data generated from analysis of PET bottles and based on bottle and drinker	IA #46, Franz & Welle (2022)
	Economic	Innovation and research	Secondary Raw Materials	Recycling (data safety evaluation)	EFSA evaluations are not applicable to all recycling practics, as all existing EFSA evaluations of PET so far rely on a 'bottle risk	D#29
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (challenge test)	There is no appropriate challenge test for polyolens	IA #10
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (safety evaluation)	EFSA assumes that all incidental contaminants have a potential for DNA reactive mutagenicitiy or carcinogenicity. Therefore th	D#29
	Economic	Innovation and research	Secondary Raw Materials	Recycling (safety evaluation)	EFSA applies extremely conservative evaluation criteria for recycled PET in bottles and trays and also for HDPE milk bottles	Welle, 2022
	Economic	Innovation and research	Secondary Raw Materials	Recycling (safety evaluation)	The prediction models EFSA uses are based on highly over-estimation	Welle (2022)
	Economic	Innovation and research	Secondary Raw Materials	Recycling (safety evaluation)	Criterea for risk assessment have an impact on the calculation of the maximum of 5% non-food contact	Welle (2022)
	Economic	Regulatory Burden	Waste management	Recycling (safety evaluation)	The EFSA criterea do not reflect current recycling practices, such as recycling of PET trays, recycling of FCM from curbside collec	IA #46
	Society	Public health & safety and health systems	Secondary Raw Materials	Recycling (safety evaluation: intended u	Recycled materials are not assessed for their adverse health effects	IA #57
	Circular Economy	Waste management	Waste management	recycling (safety evaluation: input)	The contamination level of the input materials for recycling processes is a deciding factor in the evaluation of post-consumer re	Welle, 2022
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (output)	Threre are no requirements for the performance of secondary raw material eg in terms of contamination & further use, ;	D#55
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (output)	EFSA has not evaluated the use of the recycled PET in microwave or hot ovens so far	D#29
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Recycling (output)	About 190 EFSA opinions (december 2021) on the safety assessment plastic recycling processes and technologies have been p	Welle (2022)
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Recycling (output)	About 180 EFSA opinions (december 2021) on the safety assessment of PET recycling processes and technologies have been p	Welle (2022)
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (output)	No existing EFSA approvals on the suitability of recycled content of LDPE / HDPE for use in beverage cartons	
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (authorization)	The Commission has not authorized any of the EFSA assessed recycling processes	E#6, IA#6, Callaert (2021)
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (authorization)	No existing EFSA approvals on the suitability of recycled content of LDPE / HDPE for use in beverage cartons	IA#48
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (authorization)	There are no clearly defined timelines, timeframes or deadlines for the European Commission's decision-making on the	D #15, D#22,D#54, D#60
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (authorization)	The regulatory requirement when changes to the recycling process / authorization process are made are insufficiently clear. Th	D#19, D#82
	Economic	Third Countries	Production and consumption	Recycling (authorization)	The requriements for recyclates produced outside of the EU are not sufficiently clear for example authorization by the EC on rec	IA #61
	Economic	Functioning of the internal market and competition	Production and consumption	Recycling (use)	No community register has been established	Callaert (2021)
	Economic	Regulatory Burden	Production and consumption	Recycling (use)	Chemical recycling is currently not (sufficiently) addressed or recognized in the FCM framework. There is no legal reference to	Groh, et al.
	Economic	Functioning of the internal market and competition	Production and consumption	Recycling (use)	Non food industries have unrestricted and unconditional access to food-grade recyclates.	L (Kox, 2021)
	Economic	Regulatory Burden	Production and consumption	Labelling	Recycled plastics that are outside of the scope of 282/2008 are not considered recycled must therefore be declared as 100 %	E#381, E#384
	Economic	Regulatory Burden	Secondary Raw Materials	Labelling	There are no specific labelling rules for recycled plastics	D#19
	Circular Economy	Competition and innovation	Competition and innovation	Labelling	Certification schemes for indication of recycled content do not requiring a physical connection between input and output / There	D#63
	Economic	Information and Communication technologies	Waste management	Traceability	The starting point for traceability for secondary raw materials is unclear (upstream raw material production / plastic article prod	D#94, De Tandt (2021)
	Economic	Public authorities	Production and consumption	Entry into force	Provision 3,9,10 & 12 of 282/2008 are not in force.	Callaert (2021)
	Economic	Public authorities	Production and consumption	Recycling (use)	The use of recycled materials is mainly subjected to MS rules	
	R. OCR					
	Economic	Public authorities		Enforcement	Enforcement resources are lacking (Financial, skils, technical, human)	E#1, E#188, IA#33, IA#44, IA#46, D#19, D#25
	Economic	Public authorities		Enforcement	There is a low enforcement intensity and quality over FCM and requirements such as DoCs	E#1, E#30, E#347, IA#53
	Economic	Public authorities		Enforcement	There is a low enforcement intensity and quality on imported products	E#188
	Economic	Public authorities		Enforcement	There is an inconsistent enforcement of FCM rules /	IA#6, C#1, D#25, European Court of Auditors.
	Economic	Public authorities		Non-compliance	Efficient tools for control and measures in case of non-compliance are lacking	IA #36
	Economic	Public authorities	Secondary Raw Materials	Recycling (enforcement)	There is a lack of enforcement controls of the recycling processes and decontamination processes	D#29
	Economic	Public authorities	Secondary Raw Materials	Recycling (enforcement)	Currently risk assessments of recycled plastics are not explicitely subject to control by National Competent Authorities	D#29
	Economic	Third Countries		Enforcement	Competent authorities located outside the EU may not have the resources, expertise or legal mandate that they would need to audit and monitor recycling installations according to EU expectations and deadlines	D#38
	Economic	Functioning of the Internal Market		Precautionary Principle	FCM business operators are not obligate to notify a recall or withdrawal of a non-compliant FCM not yet in contact with food	E#322
	Frameworks on Chemicals / Waste / other					
	Economic	Regulatory Burden		Interconnection	The interconnection between the FCM framework and other frameworks such as REACH and the drinking water directive is not sufficient	E#27, E#53, E#54
	Economic	Regulatory Burden		Definitions	The definitions of polymer and plastic are not consistent	E#31
	Economic	Regulatory Burden		Interconnection	FCMs are excluded from the REACH authorization process.	Geueke & Muncke (2018)
	Circular Economy	Waste management	Waste management	Labelling: Waste management	It is not mandatory to indicate to the consumer how the packaging should be recycled or managed	IA#64
	Society	Public health & safety and health systems		Interconnection	Substances restricted or phased out under other legislations are not automatically phased out in FCM	E#27, E#107, E#134, E#156, IAA#53
	Economic	Functioning of the internal market and competition	Competition and innovation	Incentive	Virgin plastics are not taxed, nor are recycled plastics economically treated differently	De Tandt (2021)
	Economic	Competition and innovation	Production and consumption	Recycling (use)	Non food industries have unrestricted and unconditional access to food-grade recyclates.	Lox (2021)
Impact	**Circular Economy**	Secondary Raw Materials	Secondary Raw Materials	Availability	Current quality of plastic recyclates on the market does not meet food packaging requirements	IA #25, IA#48
	Circular Economy	Production and consumption	Secondary Raw Materials	Availability	There are concerns about the shortage of food-grade recycled plastic for the non-alcoholic beverage industry	Lox (2021)
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Availability	There is a limited availability of recycled materials meeting the technical and legal requirements for use in contact with food	IA #11 IA #47 iA #51 #54
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Availability	Current quality of plastic recyclates on the market does not meet food packaging requirements	IA #25
	Economic	Functioning of the internal market and competition	Production and consumption	Market	The recycled FCM market is currently non-existent for polymers other than PET.	De Tandt (2021)
	Economic	Functioning of the internal market and competition	Production and consumption	Market	FCM rPET market prices are higher than that of virgin PET	De Tandt (2021)
	Social	Regulatory Burden		Framework	The complex regulatory framework increases legal uncertainty	E#384
	Economic	Conduct of SME's		Framework	The current complex regulatory systems impact the the compliance and therewth the competitiveness, innovation and growth,	IA#8
	Economic	Competitiveness	Competition and innovation	Framework	The stricter rules on plastic and recycled materials impact the level of playing field compared to non plastics	IA#54
	Economic	Competitiveness		DoC	There are concerns over the protection of intellectual property when information is demanded to be disclosed.	IA #29
	Social	Education, traning and skills		Knowledge & Skills	Compliance to the regulatory requires sufficient knowledge about FCM rules	E#146, E#347,IA#23 IA #44
	Economic	Information and Communication technologies		Information & Traceability	The lack of information, communication and raceability impacts compliance	IA#49
	Economic	Regulatory Burden		Safety	Demonstration of safety is challenging	
	Economic	Regulatory Burden		Traceability	The criteria for traceability are challenging to be met	
	Economic	Regulatory Burden		Use	The complex regulatory framework makes understanding the requirements and possibilities for FCM with SRM challenging	IA#46
	Economic	Functioning of the Internal Market & Competitiveness		Non-harmonization	Differences between national laws, regulations and administrative procedures (eg. safety assessment and authorisation of substances used in the manufacture of materials and articles intended to come into contact with food) hinders the free movement and creates conditions of unequal and unfair competition.	R. 1935/2004
	Economic	Regulatory burdens pressure		Non-harmonization	The non-harmonization of FCM creates operational **uncertainty** for businesses	E#1, E#145
	Economic	Compliance costs		Non-harmonization	The fragmented system of non-harmonized materials and addition national regulation increase (compliance) costs for	f
	Economic	Regulatory burdens pressure		Non-harmonization	The fragmented system of non-harmonized materials and addition national regulation creates regulatory **complexity**	E#1, E#145, E#31, IA #16, IA 39 IA #41 #62 C#1IA #16, IA 39 IA #41 #62
	Society	Public health & safety and health systems		Non-harmonization	There fragmented system of non-harminozed materials, additional national regulation and the application mutual recognition principle increases safety concerns	E#1, E#47,
	Economic	Third Countries		Non-harmonization	The fragmented system of non-harmoinzed materials impacts control of imports	IA #42
	Economic	Functioning of the Internal Market		Non-harmonization	The fragmented system of non-harminozed materials, additional national regulation and the application of mutual recognition principle leads to barriers to trade and impact functioning on the single marke	E#145, E163
	Society	Public health & safety and health systems		Safety	There are concerns over the safety of consumers with the current framework	E#1
	Economic	Regulatory Burden	Secondary Raw Materials	Framework	There is legal uncertainty for the (future) use of new materials	E#347

	R. 282/2008					
	Economic	Regulatory Burden	Secondary Raw Materials	Framework	There is legal uncertainty regarding the status of chemical recycling	IA#6, D#84, 83
	Economic	Innovation and research	Competition and innovation	Framework	Current barriers to recycling processes and technologies (such as chemical recycling) hamper the development of innovative so	IA #51
	Circular Economy	Production and consumption	Production and consumption	Recycling (safety evaluation)	The design of the currnt safety evaluation impacts the application of post-consumer recyclates in packaging materials for	Franz & Welle (2022)
	Social	Public health & safety and health systems	Production and consumption	Recycling (safety evaluation)	The design of the current safety evaluation of recycling processes might over-protect the consumer	Franz & Welle (2022)
	Economic	Competition and innovation	Production and consumption	Recycling (safety evaluation)	The design of the current safety evaluation generate barriers to the application of post-consumer recyclates for food packaging	Franz & Welle (2022)
	Circular Economy	Production and consumption	Production and consumption	Recycling (authorization)	The Absene of authorization creates uncertainty in the market	E#6, E#164 D #15, Misko, 2019
	Economic	Regulatory Burden	Competition and innovation	Recycling (general process)	The current authorization procedure negatively impacts legal and commercial certainty	D#81
	Circular Economy	Production and consumption	Secondary Raw Materials	Recycling (general process)	There is unclarity regarding the use of new recycling methods and technologies.	IA #19
	Economic	Compliance costs	Competition and innovation	Recycling (authorization)	The long authorization procedure for (novel) recyclng technologies is financially burdensome: it adds significant day to day cost	D#74
	Circular Economy	Competition and innovation	Competition and innovation	Recycling (authorization)	The long authorization procedure for (novel) recycling technologies impacts the investment in and availability of recycling processes	Misko, 2019, D90, D81
	Circular Economy	Competition and innovation	Competition and innovation	Recycling (authorization)	Innovation is slowed down and competition of (European) companies is negatively impacted due to the long and complex authorization procedure for (novel) recycling technologies	D#90, D#81
	Circular Economy	Production and consumption	Competition and innovation	Recycling (scope)	The lack of addressing chemical recycling impacts the production of recycled materials that can be used in FCM packaging;	IA#54
	Circular Economy			Recycling (use)	Not all recycled materials obtained from recycling can be used for FCM packaging	IA#54
	Circular Economy			Recycling (use)	Only recovered PET is currently suitable to be used in food contact materials provided that adequate decontamination processes are used,	Misko, 2019
	Circular Economy			Recycling (use)	Recyclates (i.e., material intended to be recycled) are of poor quality for industry	Misko, 2019
	Economic	Regulatory Burden	Secondary Raw Materials	Recycling (use)	There is legal uncertainty for the (future) use of recycled materials	IA #14, C#227, D#85
	Economic	Regulatory Burden	Waste management	Recycling (process)	Plastic recyclers are in a regulatory grey-zone due to the lack of clear legislative measures aimed at the recycling and recovery of all plastics material types.	
	Economic	Regulatory Burden	Secondary Raw Materials	Use	There is legal uncertainty for the (future) use of recycled materials	E#227
	Circular Economy	Secondary Raw Materials	Secondary Raw Materials	Labelling & Certfication	Way of calculating recycled content can lead to situations where the claim of recycled content for the final product is disconnect	D#63
	Circular Economy	Production and consumption	Production and consumption	Labelling	There are no labelling incentives for using recycled materials, especially regarding recycled materials derived from chemical recycling	C#381
	Environment	Climate	Production and Consumption	Life Cycle	There are concerns over the environmental life cycle impacts of SRM (for example due to recovery recycling)	IA #18
	Environment	Climate	Production and Consumption	Life Cycle	There are concern about the overall sustainability of bio based substances in FCm	IA#7, IA#8
	R. OCR					
	Economic	Public authorities		Enforcement	There are concerns over the enforcement of FCM/A	E#1, E#30, E#41
	Economic	Third countries		Enforcement	There are concerns over the safety and compliance of third country products // the competence of "competent authority" to perform controls on on EU Regulations	E#41, D#82
	Economic	Third Countries		Enforcement	There are concerns over the enforcement of third country products // the competence of "competent authority" to perform cor	E#31, D#82
	Economic	Third countries		Enforcement	there are concerns about the the competence and jurisdiction of "competent authority" to perform controls on EU Regulations	IA#53
	Economic	Third Countries		Non-harmonization	The fragmented system of non-harmoinzed materials impacts the enforcement of FCM/A and the control of imports	IA #42, IA52

Annex 5 Overview Regulatory Bottlenecks

A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.	M.	No	O.	P.	Q.
GB # (in thesis)	**General Bottleneck**	**RB # (in thesis)**	**Regulatory Bottleneck**	**Category**	**Source**	**(Identified) Specific and or related driver**	**Relevant EU regulatory framework**	**Legal tekst**	**Problem (Explanation or**	**Source**	**Identified consequence**	**Source**	**BRIGHT Issue Category**		**Potential BRIGHT Action Category**	
A.	The current framework does not make formally a distinction between PRM and SRM	1.	There is no legal distinction between virgin and recycled material / PRM and SRM for the manufacturing of FCM	Scope: definition		The Framework regulation states that the use of recycled materials and articles should be favoured in the Community for environmental reasons, provided that strict requirements are established to ensure food safety and consumer protection.	**Regulation 1935/2004 – *Recital 24 (& Article 5 .1*** "Specific measures for groups of materials and articles")	**Regulation 1935/2004 –** *Recital 24 "* The use of recycled materials and articles should be favoured in the	The FCM framework does not make a distinction between virgin and recycled material and seems to treat them in the framework as the same. Instead, the FCM framework is FCM/A based: the framework regulates per material / article. This is because of technological characteristics of the different groups of materials and articles. Article 5 of Regulation 1935/2004 does leaves room to furhter regulate recycled material. Based on this Article 5, Regulation 10/2011 regulates plastic material and Regulation 282/2008 specifically recycled plastic materials and articles. However, not all recycled plastics are covered by 282/2008 as Article 2 of Regulation 282/2008 excludes a few plastics from the scope of the regulation. These Recycled plastics that are not covered by 282/2008 fall in a grey area as they are not considered recycled plastics under 282/2008, but are considered recycled according to Article 5 of FCM 1935/2004. Furthermore, SRM can differ in their characteristics from PRM also in other materials.		There are no additional requirements for recycled materials except when they fall under the scope of Regulation 282/2008. This leaves room for legal uncertainty and safety concerns. Ultimately this can lead to additional MS action.		*Efficiency legislation*	**Legal technicality issue**	Re-regulation	Change existing regulation
		25	There are no general requirements for recycled articles or materials.	Scope: requirements	D#29, IA#	The Framework regulation states that the use of recycled materials and articles should be favoured in the Community for environmental reasons, provided that strict requirements are established to ensure food safety and consumer protection.	**Regulation 1935/2004 – *Recital 24 (& Article 5.1*** "Specific measures for groups of materials and articles")	**Regulation 1935/2004 –** *Recital 24 "* The use of recycled materials and articles should be	The FCM framework does not make a distinction between virgin and recycled material and seems to treat them in the framework as the same. Except for recyclates covered under Regulation 282/2008 there is no formal restriction on the use of recycled articles and materials, as long as they comply to other (safety) criteria and requirements such as the safety requirement in Article 3 of Regulation 1935/2004. Furthermore, there are no general requirements for recycled articles or material. For example there is no general requirement that all recycled articles / materials should be decontaminated, authorized by the European Commission or evaluated by EFSA. There are also no additional safety requirements.		There are no additional requirements for recycled materials except when they fall under the scope of Regulation 282/2008. This leaves room for legal uncertainty and safety concerns. Ultimately this can lead to additional MS action.		*Lack of necessary Rules*	**Legal objective issue**	Re-regulation	Change existing regulation
		2.	There are no general requirements for recycled plastic articles or materials.	Scope: requirements		Certain types of plastic materials and articles manufactured with recycled plastics may only be suitable for contact with specified types of food under certain conditions. Therefore article 4.e of Regulation 282/2008 establishes that there must be established conditions of use of the recycled plastic.	**Regulation 282/2008,** ***Article 5.4*** *"Application for authorisation of recycling processes and opinion of the Authority"* ***& 6.3*** *"Authorisation of recycling processes"* **& Regulation 282/2008 provision 16**	**Regulation 282/2008** ***provision 16:*** Certain types of plastic materials and articles	In Regulation 282/2008 there are no overall conditions and requirements for recycled plastic materials and articles . Instead conditions regarding restrictions concerning the plastic input, restrictions concerning the recycling process and any conditions in the field of application of the recycled plastic that has been manufactured by the recycling proces are recycling process specific. This is because the recycling process is specific as regards technology and process parameters used. The only overarching conditions for recycled plastics are the ones stated in Regulation 1935/2004 and 10/2011. The legally non-binding recommendations that EFSA gives in their scientific opinions such as the recommendation of 5% non food contact materials in the recycling input is meanwhile being seen as leading by the		There are no additional requirements for recycled materials except when they fall under the scope of Regulation 282/2008. This leaves room for legal uncertainty and safety concerns. Ultimately this can lead to additional MS action.		*Efficiency legislation*	**Legal technicality issue**	Re-regulation	Change existing regulation
		38	The definition of 'recycled (plastic) material and article' is not sufficiently clear	Scope: definition			**Regulation 282/2008 Article 1** *Subject Matter and Scope* **& Article 3** *Requirements for recycled plastic materials and articles*	**Regulation 282/2008 Article 3** ***Requirements for recycled plastic materials and articles*** "1. Recycled plastic materials and articles shall only be placed on	Article 1 of Regulation 282/2008 defines 'recycled plastic materials and articles' as recycled materials and articles that can contain contain recycled plastic. This definition 'recycled plastic materials and articles' can refer to different steps in the converting and manufacturing procss. It can refer to 'plastic food contact materials and articles that are derived from a recycling process' (intermediate material from decontamination), 'plastic food contact amterials and articles that contain a certain percentage of recycled plastic' (intermediate material after conversion)' or 'food contact materials and articles in their finished state that contains (a certian percentage of) recycled plastic' (final product). As Article 3 subsequently imposes the condition that Recycled plastic materials and articles shall only be placed on the market if they contain recycled plastic obtained only from a recycling process, the latter option does seem to apply. However as the definitions of 'materials and articles' included in Regulations (EC) No 10/2011 and 1935/2004, the FCM framework does not not make sufficient distinction between recyclates and FCM containing recylates. This complicates also the interpretation to which specific recycled materials and article 3 refers. If 'Recycled plastic material and articles' refers to the final article, but 282/2008 subsequent excludes certain types of recycled materials it is not sufficiently clear if final recycled materials containing multilayers, functional barriers are allowed.		Legal uncertainty		*Lack of interpretation*	**Legal Clarification**	Re-regulation	Change existing regulation
B.	The declaration of compliance as it is currently designed is not sufficient and / or does not contain all the necessary information	3	The DoC does not contain sufficient information	DoC	IA, #3, IA#	Information must be generated and exchanged in the supply chain in order to be able to demonstrate compliance. Article 16 of Regulation 1935/2004 therefore imposes the conditions that materials and articles covered additional measures are accompanied by a written	**Regulation 1935/2004 – Recital 24 & Article, 5** *Specific measures for groups of materials* **. Article 16** *Declaration of Compliance*	**Regulation 1935/2004 – Recital 24, Article 5** *Specific*	A declaration of compliance (DoC) is required for plastics and recycled plastics. However, the content of the DoCs from the raw material supplier is not sufficient to do appropriate risk assessment on the final articles. For example, risk assessments, scientific evidence, migration test results and other supporting documents are not part of the DoC.	IA, #3, #4, I	This has impact on the functioning of the internal market and puts a burden on cross-border trade. For example because the European Commission provides no DoC guidance for non-harmonized materials. Furthermore the absence of a DoC requirements regarding sufficient information can impact the risk assessment in the value chain		*Efficiency legislation*	**Legal technicality issue**	Re-regulation	Change existing regulation
		4	Doc is not standardized for all FCM	DoC	IA#5, IA #	Information must be generated and exchanged in the supply chain in order to be able to demonstrate compliance. Article 16 of Regulation 1935/2004 therefore imposes the conditions that materials and articles covered additional measures are accompanied by a written declaration stating that they comply with the rules applicable to them.			A declaration of compliance (DoC) is according to Article 5 and 16 of Regulation 1935/2004 required for all materials and articles and combinations of those materials and articles or recycled materials that are covered by specific measures. So far only (recycled) plastics, regenerated cellulose, active and intelligent packaging, and ceramics are covered by specific measures. This means that a DoC is only required for these materials on a union wide level. SRM / recycled materials used in the manufacturing of paper and board, or the use of secondary raw paper and board material are not subjected to a DoC requirement on a EU Level.MS can however according to Article 16.2 require a DoC for the non-harmonized materials. This is not conditional on additional rules. MS can thus require a DoC for materials to which no further national rules apply.		This has impact on the functioning of the internal market and puts a burden on cross-border trade. For example because the European Commission provides no DoC guidance for non-harmonized materials. Furthermore the absence of a DoC requirements regarding sufficient information can impact the risk assessment in the value chain .		*Efficiency legislation*	**Legal technicality issue**	Re-regulation	Change existing regulation
Q	There is unclarity when a SRM is allowed to be used for FCM/A in terms of the material life cycle	39	The product status of offcuts and scraps is not sufficiently clear	Scope: life cycle status		The use of recycled materials and articles should be favoured in the Community for environmental reasons, provided that strict requirements are established to ensure food safety and consumer protection	**Regulation 282/2008 Article 1.2** *Subject matter and scope*. **Provision 7**, **Directive 2008/98 Article 3.17** Definitions	**Regulation 282/2008 Article 1.c** "This Regulation shall not apply to the following recycled plastic materials and articles, provided that they have	Regulation 282/2008 excludes recycled plastic materials and articles that are made from unused plastic production offcuts and/or process scraps in compliance with Directive 2002/72/EC, that are recycled within the manufacturing site or are used at another site. As Regulation 282/2008 Article 1.2 refers to recycled materials and articles and as according to the defintions in Directive 2008/98 recycling is a recovery operation by which waste materials are reprocessed, it is unclear when en wether such off-cuts and scraps can meet the conditions of by-product (article 5 from 2008/98) or wether they should apply the end-of-waste conditions (article 6 from 2008/98). Offcuts and scraps can be reclaimed at different stages of production. Off-cuts and scrap regrinded within the same company (other location) and used on the original plant, reprocessed and regrinded by third party and used at the original site, reprocessed in another site of the same company but they can also be taken back from customers and from the market. Scraps and offcuts also often require some kind of process to make them usable, for example washing, milling.It is thus unclear untill which step in the production process offcuts and scraps can be considered exempted from 282/2008, especially as Article 1.2 of Regulation 282/2008 states 'use at another site' but does not furhter explain this.	D#19, D#29,	De Tandt (2021)		*Lack of interpretation*	**Legal Clarification**	Reregulation	Change existing regulation
		40	It is unclear when and whether printed materials can be considered offcuts and scraps.	Scope: life cycle status			**Regulation 282/2008 Article 1.2** *Subject matter and scope*. **Provision 7**, **Regulation 2023/2006**	**Regulation 282/2008 Article 1.c** "This Regulation shall not apply to the following recycled plastic materials and articles, provided that they have	Regulation 282/2008 excludes recycled plastic materials and articles that are made from unused plastic production offcuts and/or process scraps in compliance with Directive 2002/72/EC, that are recycled within the manufacturing site or are used at another site. The regulation does not specify whether the exeption applies to printed materials or wether that is considered 'otherwise contaminated' according to provision 7 of Regulation 282/2008, *although the Annex of the GMP regulation printing inks should be applied to the non food-contact side of materials and shall not transfer substances to the food-contact side;)*				*Lack of interpretation*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
L	The conditions and requirements for materials and substance deriving from bio-based sources are not sufficiently clear	28	There is no specific legislation in place applying to bio-based plastics that could beused in the manufacturing of plastics or paper FCM/A.						Biopolymers and other bio-based sources that can be used in the manufacturing of FCM/A are not regulated in the EU seperately. With the exception that plastics intended to be certified as biodegradable or compostable must undergo additional ecotoxicity tests. There are no definition for "bioplastics" "bio-based." As paper and cardboard are not harmonized, biopolymers can be used in the manufacturing of paper and board. For the manufacturing of plastic FCM/A, only substances and materials that have been assessed and listed in the Union list are allowed to be used in the manufacturing of plastics FCM/A. Some bio-based materials are taken up in this list. For example, authorisation has been given for "wood flour and fibers, untreated". For the use of bamboo or corn or rice husks in the manufacture of plastic food contact materials and articles, no legal basis exists . Its use is therefore considered to be not in compliance with the compositional requirements set out in chapter II of Regulation (EU) No 10/2011. There are thus no specific requirements / conditions for the use of bio-based materials / deriving from plant sources.	IA #47, I#14, https://ec.europa.eu/food/system/files/2021-06/cs_fcm_meeting-ind_20200623_en.pdf			*Lack of necessary Rules*	**Legal objective issue**		
C	The conditions and requirements for different recycled plastics materials and articles are limited or not sufficiently clear	29	The scope of 282/2008 excludes certain recycling practices and certain uses of recycled Plastic	Recyclates (requirements & use)		Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process. Article 6.3.2 regulates that the decision that grants the authorisation should include any conditions in the field of application of the recycled plastic that has been manufactured by the recycling process;	**Regulation 282/2008 Article 1** *Subject matter and scope*	**Regulation 282/2008. Article 1.2** "This Regulation shall not apply to the following recycled	Recycled plastics outside the scope of 282/2008 are not safety assessed by EFSA. There are subsequently no recommendations or condition in the field of application for these plastics formulated or imposed		Legal uncertainty & safety concerns		*Lack of necessary Rules*	**Legal objective issue**		
		5	The definition of 'plastic input' in Regulation 282/2008 limits the input into the recycling to decontamination of post-consumer waste.	Definition	D#18	Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process	**Regulation 282/2008** ***Article 2.b*** Definition	***Regulation 282/2008*** *Article 2.b* 'plastic input' means collected and sorted post-use plastic	According to the definition in Regulation 282/2008 plastic input means collected and sorted post-use plastic materials and articles used as input into a recycling proces. This definition excludes pre-used materials and articles from the plastic input.	D#18	This definition contributed to a blurred line between waste and product, and thus the interconnection between the WFD and the FCM framework. Furthermore, this definition could potentially become a future regulatory bottlenecks when the scope of the regulation would include more types of recycled plastic materials and articles.		*Efficiency legislation*	**Legal technicality issue**	Reregulation	Change existing regulation
		24	Strictly and formalistically speaking, a PCR substance does not fall under the definition of NIAS	Defintion	Franz & Welle (2022)		**Regulation 10/2011 Article 3.9** Definitions **& Article 6.4.a** Derogations for substances not included in the Union list	**Regulation 10/2011 Article 3.9** 'Non-intentionally added substance' means an	According to the definition in Regulation 10/2011 NIAS are substances that are **formed** during the production process or a decomposition or reaction product. Strictly speaking substances from PCR waste are not NIAS because they aree not formed during the production process or decomposition or a reaction product. They were already preset in the waste. This raises questions what PCR substances are and if they are allowed to be in plastic considering that for NIAS an examption is given in Article 6.4.a. Specifically considering Regulation 282/2008 does not address contaminants in recycled materials and articles				*Interconnection*	**Legal technicality issue**		
			The requirements and the obligations for the licenseholder are not sufficiently clear.		D#19, D#82		**Regulation 282/2008 Article 7** *Obligations arising from the authorisation* ***& Article 8*** *Modification, suspension and revocation of authorisation of a recycling proc* ess		The regulatory requirement when changes to the recycling process / authorization process are made are insufficiently clear. The requirements and the obligations for the licence holder are not suffciently clear. For example running out of business or process modification.More information needed.							
	The conditions and requirements for recycled plastics deriving from chemical recycling (and hybrid recycling) processes are not sufficiently clear	14	The scope of Regulation 282/2008 excludes recycled plastic materials and articles made with monomers and starting substances, derived from chemical depolymerization of plastic materials and articles	Scope: Chemical Recycling		Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process.			Regulation 282/2008 exlcudes recycled plastic materials and articles made with monomers and starting substances, derived from chemical depolymerization of plastic materials and articles from the scope. This means that recommendations or condition for the application of the recycled plastic made with monomers and starting substances, derived from chemical depolymerization of plastic materials and articles, are not available as they are not safety assessed by EFSA and are not granted authorisation under Regulation 282/2008				*Effectiveness legislation*	**Legal technicality issue**	Reregulation	Change existing regulation

I		30	Chemical recycling and products deriving from it are currently not sufficiently addressed in the FCM framework	Scope: Chemical Recycling	IA#6, D#6	Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process.	**Regulation 282/2008 Provision 6 & Article 1.2** *Subject matter and scope*	**Regulation 282/2008 Provision 6**: "Plastic waste can be treated mechanically to produce recycled materials	Conditions and Requirements for chemical recycling procssees are not addressed in the FCM framework. The only reference to these chemical recycling techniques/processes is in Regulation 282/2008 in which they are excluded from the scope (recycled plastic materials and articles made with monomers and starting substances, derived from chemical depolymerization of plastic materials and articles are excluded from the scope of appication of the regulation). In provision 6 of Regulation 282/2008 it becomes clear that these materials should fall under Regulation 10/2011 and that the specifications and purity criteria estab-lished therein apply to products derived from chemical recycling. This means there are no specific additional rules for articles and materials derived from chemical recycling processes. Furthermore there is a regulatory grey zone for recycled raw materials that do not match the chemical characteristics of Regulation 10/2011.				*Lack of necessary Rules*	**Legal objective Issue**	Reregulation, Improve application	Change existing regulation, "Provide Guidance or implementation documents"
		41	The scope of Regulation 10/2011 is not sufficiently clear regarding chemical recycling	Scope: Chemical Recycling			**Regulation 282/2008 Provision 6 & Article 1.2** *Subject matter and scope*	**Regulation 282/2008 provision 6**: "Plastic waste can be treated mechanically to produce	Regulation 282/2008 exlcudes recycled plastic materials and articles made with monomers and starting substances, derived from chemical depolymerization of plastic materials and articles from the scope. In provision 6 it becomes clear that these materials should fall under Regulation 10/2011. However, Regulation 10/2011 is not sufficiently clear regarding chemical depolymerization. Clarification is required as to whether 10/2011 applies to chemical recycling and if so, what forms of chemical recycling are in scope. For example whether postconsumer recycled plastics, chemical recycling back to starting ingredients/monomers, is also considered as recycled plastic.		If chemical recycling technologies would not fall under the scope there is currently no pathway to use certain plastics recyclates for food-contact use.		*Lack of Interpretation*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
M	The conditions and requirements for recycled plastics deriving from future and innovative processes are not sufficiently clear	31	Future and innovative recycling processes are not sufficiently addressed in the FCM framework	Scope: Future & innovative recycling		Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process.	**Regulation 282/2008** Article 1.2 *Subject matter and scope*	Regulation 282/2008 Provision 6: "Plastic waste can be treated mechanically to produce recycled materials	Although Article 2 of Regulation 282/2008 gives the impression, that besides the excluded chemical recycling process, all recycling processes are regulated under the scope of Regulation 282/2008 the implementation documents by Authority give an other impression. The "Guidelines on submission of a dossier for safety evaluation by the EFSA of a recycling process to produce recycled plastics intended to be used for manufacture of materials and articles in contact with food" (EFSA, 2008 717) that are constructed based on Article 5.2 of Regulation 282/2008 for example only specifically apply to process using mechanical recycling. Instead, it is implied that the recycled plastics that do not fall under the scope of Regulation 282/2008 are regulated by Regulation 10/2011. However, this is not legally made clear in Regulation 10/2011 nor in Regulation 1935/2004.		There is regulatory doubts if recycled articles and materials that are not fa		*Lack of necessary Rules*	**Legal objective Issue**	Reregulation	Change existing regulation
		42	Future and innovative recycling processes are not sufficiently addressed in the FCM framework	Scope: Future & innovative recycling									*Lack of Interpretation*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
J.	The conditions and requirements for the uptake of different recycled plastics materials and articles (HDPE, LDPE PP, PET) in different use scenarios are not sufficiently clear	15	There are no existing EFSA approvals on the suitability of recycled content of LDPE / HDPE for use in beverage cartons	Recycling (safety evaluation - assessments)	IA#47	Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process	**Regulation 178/2002 Article 29** ***Scientific Opinions*** EFSA J. 2011, 9, 2184 & EFSA J. 2015, 13, 4016	**Regulataio 178/2002 Article 29** the Authority shall issue a scientific opinion: (a) in all cases where Community legislation	EFSA has only evaluated HDPE crates. In 2011 EFSA published a scientific opinion with the criteria the Authority uses for the safety evaluation of recycling process to produce recycled FCM PET. For other recycled polymers than rPET no general advice has been given. Based on the safety assessment of the 'Biffe Polymers' and 'CLRrHDPE' in February 2015 conditions for the use of rHDPE have been formulated. These are however limited. Following the safety assessment, rHDPE can be used for 30% in new FCM when the non-food contamination of the input stream is brought back to 1%. It must be mentioned that this advice is restricted to specific situations as in this case the post-consumer HDPE bottes must be collected in the UK and it can only be used to manufacture trays for transport, storage and display of whole fruits and vegetables. There is thus no rHDPE statement for other FCM such as packaging and beverage cartons. The conditions and requirements for the uptake LDPE & HDPE in different use scenaries are thus neither sufficiently clear.				*Effectiveness legislation*	**Legal technicality issue**	Improve application	Provide Guidance or implementation documents
		16	Important plastic materials and substances are missing in the in the EFSA assessed recycling processes	Recycling (safety evaluation - assessments)		Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process	**EFSA scientific opinion + (Regulation 282/2008, Article 5.4** *Authorisation of recycling processes* **& 6.3** *Authorisation of recycling processes* **)**	**Regulation 282/2008, Article 5.4** "In the event of an opinion in favour of authorising the	EFSA has published over 190 (December 2021) (positive) safety assessment. About 180 EFSA opinions are (december 2021) on the safety assessment of PET recycling processes and technologies have been published. The others concerns HDPE bottles to pellets (2015: CLRrHDPE and Biffa Polymers), PP & HDPE crates to crates (2018: Morssinkhof Plastics, 2013: Schroeller Arca systems & 2013 CO.N.I.P.), PP crates-to-crates (2012: INTERSEROH Step 1 & 2010: PP crates CHEP) Important plastic materials and substances are missing in the in the EFSA assessed recycling processes. For example, no recycling processes have been approved by EFSA so far that can be used in flexible plastic food packaging.				*Effectiveness legislation*	**Legal technicality issue**	Improve application	Provide Guidance or implementation documents
		17	Existing EFSA have *not evaluated* the use of the recycled PET in microwave or hot ovens.	Intended use		FCM/A must be safe under normal or foreseeable conditions	EFSA scientific opinion + (**Regulation 282/2008, Article 4.d.e. 4** *Conditions for the authorisation of recycling processes*)	**Regulation 28**	Many EFSA opinions exclude the use of recycled materials in microwaves and oven. This is not becuase EFSA opinions have evaluated and found the use of recycled material in microwave and hot ovens to be un-safe, EFSA did not evaluated the use of the recycled PET in microwave or hot ovens. This is also because the existing EFSA evaluations of PET rely on a "bottle risk assessment" and the assumption that the food is stored in the packaging for "one year at room temperature" prior to consumption. These conditions are not applicable to overnable and microwavable scenarios.					**Legal technicality issue**	Improve application	Provide Guidance or implementation documents
			The conditions for the authorization of non-EU recyclers are not sufficiently clear nor are the requirements for recyclates produced outside of the EU	Recycling (safety evaluation - assessments)	D#50, IA#61, D#20				Regulation 282/2008 does not make a distinction between EU and non-EU recyclers except in Article 3.10. More information needed				*Effectiveness legislation*			
D	The EFSA guidelines and criteria for the safety evaluation of plastics recycling process are not sufficient (for all recycled plastics, plastics recycling processes and practices, recycled plastic uses) and is not sufficiently reflective of current scientific knowledge.	6	EFSA has (only) published evaluation criteria for the safety assessment of PET	Recycling (safety evaluation - criterea)	IA#3, IA#1	Chemical substances present in recycled plastic can have an adverse impact on human health or the environment .Article 3 of Regulation 282/2008 therefore imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process that controls the quality of plastic input.	**Regulation 282/2008** ***Article 4*** **.** *Conditions for the authorisation of recycling process* **s & EFSA J. 2011, 9, 2184 & EFSA J. 2015, 13, 4016**	**Regulation 282/2008** *Article 4* "In order to be authorised, a recycling process shall comply with	In order for a recycling process under Regulation 282/2008 to be authorized, the recycling process has to be safety assessed by EFSA. As PET is currently the most recycled polymer for food contact use EFSA developped specific criteria regarding the safety evaluation for PET recycling in 2011. In 2011 EFSA published a scientific opinion with the criteria the Authority uses for the safety evaluation of recycling process to produce recycled PET. For other recycled polymers than rPET no general advice has been given. Based on the safety assessment of the 'Biffa Polymers' and 'CLRrHDPE' in February 2015 conditions for the use of rHDPE have been formulated. For other materials, there are no evaluation criterea developped.	IA#3, IA#1	The evaluation principles of PET and HDPE can analogously be applied for other polymers or recyclate applications. But the final assessment, whether the recycling process complies with the conditions laid down in Article 4 of EU Regulation 282/2008, are in the hands of EFSA. In those cases the above conditions are not fulfilled, the petitioner must provide further information to prove the safety of the process. This makes the safety assessment unpredictable and creates uncertainty.	Franz & Welle	*Efficiency legislation*	**Legal technicality issue**	Improve application	Provide Guidance or implementation documents
		26	EFSA has (only) published submission guidelines for the safety assessment and safety criteria for the evaluation of mechanically recycled plastic for direct food contact applications.	Recycling (safety evaluation - guidance)		Article 3 of Regulation 282/2008 therefore imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process. EFSA has to publish guidelines for the safety assessment of a recycling process.	**Regulation 282/2008, Article 5.2** "Application for authorisation of recycling processes and opinion of the Authority" & **EFSA J. 2008, 717 & EFSA J. 2011, 9, 2184**	**Regulation 282/2008** *Article 5.2* "2. The technical dossier shall contain the information	EFSA published on July 1st, 2008 the document "Guidelines on submission of a dossier for safety evaluation by the EFSA of a recycling process to produce recycled plastics intended to be used for manufacture of materials and articles in contact with food" (EFSA, 2008). The latest version was endorsed on September 9th 2020. This document provides guidance on the administrative and technical data that are required for the evaluation of the recycling process by EFSA. These guidelines only apply to the recycling processes falling under Regulation 282/2008. There are thus no guidelines for other recycling processes such as chemical recycling.		Recyclates deriving from recycling processes falling outside of the scope can still be used in FCM. There is no clarity how to safety assess these. These guidelines could potentially become a future regulatory bottlenecks when the scope of the regulation would include more types of recycling practices and processes.		*Legislative Purpose*	**Legal objective Issue**	Improve application	Provide Guidance or implementation documents
		47	There is limited guidance for non-PET recycling practices as these polymers are not covered by the EFSA scientific opinions	Recycling (safety evaluation - guidance)		Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process EFSA	**Regulation 282/2008, Article 5.2** "Application for authorisation of recycling processes and opinion of the Authority" & **EFSA J. 2008, 717 & EFSA J. 2011, 9, 2184**	**Regulation 282/2008** *Article 5.2* "2. The technical	In 2011 EFSA published a scientific opinion with the criteria the Authority uses for the safety evaluation of recycling process to produce recycled PET. For other recycled polymers than rPET no general advice has been given.		The evaluation principles of PET and HDPE can analogously be applied for other polymers or recyclate applications. But the final assessment, whether the recycling process complies with the conditions laid down in Article 4 of EU Regulation 282/2008, are in the hands of EFSA. This makes the safety assessment unpredictable and creates uncertainty.		*Lack of Guidance*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
		48	There is limited guidance on the authorization of recycling HDPE in a EU and non bottle-to-tray scenario's.	Recycling (safety evaluation - guidance)		Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process	**EFSA J. 2015, 13, 4016**		In 2011 EFSA published a scientific opinion with the criteria the Authority uses for the safety evaluation of recycling process to produce recycled PET. For other recycled polymers than rPET no general advice has been given. Based on the safety assessment of the 'Biffa Polymers' and 'CLRrHDPE' in February 2015 conditions for the use of rHDPE have been formulated. For other materials, there are no evaluation criterea developped. The criterea established in the 'Biffa Polymers' and 'CLRrHDPE' safety assessment are restricted to specific situations. In the 'Biffa Polymers' and 'CLRrHDPE' case the post-consumer HDPE bottels have be collected in the UK and it can only be used to manufacture trays for transport, storage and display of whole fruits and vegetables. EFSA furhtermore also stated that these criteria cannot be extrapolated to other HDPE processes in the EU, because of the limited statistical evidence.There is thus no rHDPE statement or evaluation criterea for HDPE practices in the current EU and other HDPE FCM packaging application such bottles. The evaluation principles of PET and HDPE can analogously be	IA#3, IA#1	This makes the safety assessment unpredictable and creates uncertainty. Furthermore it is unclear how the non binding advice of 30% recycled content for HDPE should be reached.	De Tandt, 2021	*Lack of Guidance*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
E	The challenge test as it is currently designed is not appropriate for all recycled plastics or recycling processes and sufficiently reflective of current scientific knowledge.	7	EFSA applies Article 4.c.ii rather strict and requires a challenge test	Recycling (cleaning efficiency evaluation)		Article 4c of Regulation 282/2008 imposes the condition that contamination of the input material must be addressed.	**Regulation 282/2008, *Article 4*** *Conditions for the authorisation of recycling processes* & **EFSA scientific opinion.**	**Regulation 282/2008 Article 4.c.ii:** " it must be demonstrated in a challenge test, or by other appro-priate	Although Article 4.c of Regulation 2828.2008 gives flexibility regarding the demonstration of reduction of any contamination of the plastic input to a concentration that does not pose a risk to human health. EFSA applies article 4.c.ii rather strict and requires a challenge test in the 2011 Scientific Opinion 'on the criteria to be used for safety evaluation of a mechanical recycling process to produce recycled PET intended to be used for manufacture of materials and articles in contact with food.'		This approach limits the use of polymers as there is no appropriate challenge test availabl		*Efficiency legislation*	**Legal technicality issue**	Improve application	Other
		27	The design of current safety evaluation such as the calculation methods, migration values, exposure scearios, concentration of potential genotoxic compounds, diffusion potential ad other assumptions and are based on overestimated data and safety factors, conservative assumptions (conservative, unrealistic, and worst-caste exposure and contamination scenario's and exaggerated conditions).	Recycling (cleaning efficiency evaluation)	& Welle (	To ensure the safety of the recycled plastic material and article, Article 4 of Regulation 282/2008 lays down the conditions for the authorisation of recycling processes + Application of the precautinary principle.	**Regulation 282/2008** Article, 2.2.d. EFSA scientific opinion 2011, 9, 2184	**Regulation 282/2008 Article 2.2.d challenge test'** means a demonstratio n of the effectiveness of a recycling process to remove chemical contaminatio n from plastic materials or	The safety evaluation of EFSA is based on individual steps in which each step has individual safety factor. Each of these steps is however treated with high individual safety factors. Specially for the input concentration, the food contact conditions, as well as the consumption data used for the exposure scenario, worse or worst-case assumptions are used. For example, EFSA assumes that all incidental contaminants in PCW are potentially genotoxic. Therefore the lowest TTC value of 0.0025 kg/kg body weight per day applies as the allowable exposure level. EFSA then also uses over-estimative prediction models for the migration calculation. Combining all these individual safety factors leads to an extreme conservative and strict evaluation of the overall process. Furthermore, the criterea for the risk assesment are based on data generated from analysis of PET bottles and based on bottle and drinker water risk assesment.		The current design of the safety evaluation prevents or limits the use of certain post-consumer plastic recyclates in direct food contact applications.		*Legislative Purpose*	**Legal objective Issue**	Deregulation	Weaken existing regulation
		18	The design of current safety evaluation such as the calculation methods, migration values, assumptions and are based on overestimated data and safety factors, conservative assumptions (conservative, unrealistic, and worst-caste exposure and contamination scenario's and exaggerated conditions).	Recycling (cleaning efficiency evaluation)							The design of the current safety evaluation and the used data and values have an effect on the evaluation criterea and recommendation regarding input characteristics, cleaning efficiency and conditions of use. For example Input contamination levels have a great influence on the required minimum cleaning efficiency: The lower the input contamination level, the lower the required cleaning efficiency. Furthermore the criterea for risk assessment have an impact on the calculation of the non-food process input (for example 5% for PET)		*Effectiveness legislation*	**Legal technicality issue**	Improve application	Other
		8	There is no appropriate challenge test for polyolefins (PP&PE)	Recycling (cleaning efficiency evaluation)	IA#10, Fr	Article 4c of Regulation 282/2008 imposes the condition that the efficiency of a recycling process must be demonstrated in a challenge test, or by other appropriate scientific evidence			Polyolefins in particular are not readily amenable to challenge tests as they are currently designed.		The use of these polymers in FCM is prevented or limited		*Efficiency legislation*	**Legal technicality issue**	**Better Governance,**	Guidance or implementation documents / Assistence / Network and cooperations structures
		19	The criteria that EFSA uses for the safety evaluation of a mechanical recycling process to produce recycled PET are based on outdated information (PET bottle data from 1997-2001).	Recycling (cleaning efficiency evaluation)		Article 4c of Regulation 282/2008 imposes the condition that the efficiency of a recycling process must be demonstrated in a challenge test, or by other appropriate scientific evidence	EFSA scientific opinion 2011, 9, 2184		The default input contamination in the safety evaluation as applied by EFSAA of 3mg/kg is based on data from 1997-2001. However, newer statistical data of contamination levels of PET recycled are not available. These data influence the outcome of the safety evaluation.	De Tandt (2	The design of the current safety evaluation and the used data and values have an effect on the evaluation criterea and recommendation regarding input characteristics, cleaning efficiency and conditions of use. For example Input contamination levels have a great influence on the required minimum cleaning efficiency: The lower the input contamination level, the lower the required cleaning efficiency. Furthermore the criterea for risk assessment have an impact on the calculation of the non-food process input (for example 5% for PET)		*Effectiveness legislation*	**Legal technicality issue**	**Better Knowledge**	

		20	The criteria that EFSA uses for the risk assessment are based on data generated from analysis of PET bottles and based on bottle and drinker water risk assessment.	Recycling (cleaning efficiency evaluation)		Article 4c of Regulation 282/2008 imposes the condition that the efficiency of a recycling process must be demonstrated in a challenge test, or by other appropriate scientific evidence	EFSA scientific opinion 2011, 9, 2184		Bottle-to-bottle recycling mineral water application data are used because they concerns the most vulnerable consumer group: infants. It is however not be reflective of all the recycling practices.	De Tandt (2	The design of the current safety evaluation and the used data and values have an effect on the evaluation criterea and recommendation regarding input characteristics, cleaning efficiency and conditions of use. For example Input contamination levels have a great influence on the required minimum cleaning efficiency. The lower the input contamination level, the lower the required cleaning efficiency. Furthermore the criterea for risk assessment have an impact on the calculation of the non-food process input (for example 5% for PET)		*Effectiveness legislation*	**Legal technicality issue**	**Better Governance,**	Guidance or implementation documents / Assistence / Network and cooperations structures
F.	The criteria for input characteristics are challenging to be met	9	EFSA applies Article 4.c rather strict and requires full traceability and 95-99% sorting efficiency.	Recycling (input)		Due to the physic-chemical properties of plastics Article 4c of Regulation 2008/282 imposes the condition that contamination of the input material must be addressed in order to ensure the integrity and safety of the rFCM. The regulation offers two possibilities: either the input material must originate from a product loop which is in a closed and controlled chain (4.c.i) as this is able to achieve a certain sorting efficiency of former FCM input. The sorting efficiency necessary for each material should then be identified on a case by case basis. Or a recycler must demonstrate by means of a challenge test or other appropriate scientific evidence that the process is able to reduce the contamination the safe levels (4.c.ii).	**Regulation 282/2008,** *Article 4 Conditions for the authorisation of recycling processes* & **EFSA scientific opinion.**	**Article 4.c** (i) c	Although Article 4.c gives flexibility regarding the input characterization, in reality EFSA has a rather strict approach. In several scientific opinions EFSA requires full traceability for the waste input mostly in the form of closed and controlled chains.		With the current technical state such as waste management and infrastructure and cooperation within the plastic value chain this requirements is challenging (unlikely) to be met.	*Efficiency legislation*	**Legal technicality issue**	Deregulation	Weaken existing regulation
		49	There is no traceability guideline for recycled plastics FCM	Recycling (input)		Article 17 of Regulation 1935/2004 imposes the conditions that the traceability of FC materials and articles shall be ensured at all stages.	**Regulation 1935/2004**, **Article 17:** *Traceat*	**Regulation 1935/2004 Article 17** Traceability 1. The	There are industrial guidelines on the traceability of material and articles for food contact, including for plastic FCMs. However, no reference is made to recycled plastic FCM's.		This contributes to legal uncertainty	*Lack of Guidance*	**Legal Clarification**	**Better Governance**	Guidance or implementation documents / Assistence / Network and cooperations structures
		43	It is unclear where the obligation of traceability starts for recyclers	Recycling (input), Interconnection	De Tandt,	Article 17 of Regulation 1935/2004 imposes the conditions that the traceability of FC materials and articles shall be ensured at all stages.	**Regulation 1935/2004**, **Article 2** *"Definitio*	**Regulation 1935/2004 Article 2** ": 1.(a) 'traceability': the ability to trace and follow a material or	Article 17 imposes the conditions that the traceability of FCM/A shall be ensured at all stages. Recyclers are manufacturers of FCM/A. They fall under the traceability requirements. They thus must have systems and/or procedures in place to identify the businesses from which and to which their materials have been supplied by means of labelling or other relevant information / documentation. It is unclear for recyclers where the obligation of traceability starts because the terms 'all stages', 'materials' and 'articles' in Regulation 1935/2004 are unclear. Furthermore, the lack of specific EoW-criteria for plastics also complicates this matter as they provide guidance under which legal framework the plastic waste falls (WFD, REACH and or FCM).	De Tandt, 2	This contributes to legal uncertainty	*Lack of interpretation*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
		50	There is insufficient guidance how to comply with the input characteristics	Recycling (input)		Due to the physic-chemical properties of plastics Article 4cof Regulation 2008/282 imposes the condition that contamination of the input material must be addressed in order to ensure the integrity and safety of the rFCM.	**Regulation 282/2008,** *Article 4 Conditions for the authorisation of recycling processes* & **EFSA guideline**	**Regulation 282/2008 Article 4** "In order to be authorised, a recycling process shall comply with the following conditions:	For a recycling process to be authorized a technical dossier has to be compiled. Based on Article 5.2 of Regulation 282/2008, the European Food Safety Authority published on July 1st, 2008 the document "Guidelines on submission of a dossier for safety evaluation by the EFSA of a recycling process to produce recycled plastics intended to be used for manufacture of materials and articles in contact with food" (EFSA, 2008). The guidance document however does not give detailed guidance how to comply with the input characteristics (Article 4 of Regulation 282/2008) as that is outside the scope of the guidelines and more an issue of "quality assurance and control system" than of "safety evaluation." There are however questions by the industry how recyclers should demonstrate the quality of the input material and with which frequency.	EFSA J. 2008, 717, Submitted comments		*Lack of Guidance*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
		10	Collected waste can contain plastics that was not manufactured according to EU FCM regulations or has been have subjected to limits or specifications	Recycling (input: characteristics), interco	D #25, D#	Due to the physic-chemical properties of plastics Article 4c of Regulation 2008/282 imposes the condition that contamination of the input material must be addressed in order to ensure the integrity and safety of the rFCM. The regulation states that the plastic input must originate from plastic materials and articles that have been manufactured in accordance with Community legis- lation on plastic food contact materials and articles	**Regulation 282/2008 Article 4** "Conditions for the authorisation of recycling processes "	**Regulation 282/2008, Article 4b**: "The plastic input must originate from plastic materials and articles that have been manufactured in accordance with Community legis- lation	Packaging Waste is differently collected and sorted in European countries. This is the effect of the implementation of the WFD. Most of the food packaging in Europe is collected in systems where Food Packaging and Non-Food Packaging are collected together in municipal waste. Waste management operators, recyclers, converters or packaging producers are unable to confirm that the material that they collect was "manufactured in accordance with Regulation (EU) No 10/2011. Sorting and seperating FCM from non-food grade plastics is technical challenging, even if previously used in contact with food because FCM that status is not inherent in the material. It cannot be verified by the recycler (i.e., the formulation of a random recycled container is unknown to the recycler, and they cannot confirm compositional compliance). Furthermore, the packaging material or article may have beensubject to limits or specifications under Reg. No. 10/2011 (i.e., functional barrier, food type, temperature limits) based on its composition, but such limits are not evident by the article's shape or size. Even though all grades of PET packaging resins sold by European manufacturers and placed on the EU market are food contact grades, there is a possibility that PET input that does not come from Europe originates from plastic materials and articles that have not been manufactured in accordance EU-FCM regualtions. Furthermore, the use of functional barriers, printing ink constituents and time and temperature limits and restrictions complicates this requirement for PET.	IA #51 D#7	This requirements impact the supply of rPET for FCM use.	*Efficiency legislation*	**Legal technicality issue**	**Reregulation, Deregulation, Better Governance, Better Knowledge**	Change existing regulation, Weaken existing regulation, Guidance or implementation documents / Assistence / Network and cooperations structures
		51	It is unclear how to count the allowed non-food food contact materials in input for recycling.	Recycling (input: non-food)		Due to the physic-chemical properties of plastics Article 4c of Regulation 2008/282 imposes the condition that contamination of the input material must be addressed in order to ensure the integrity and safety of the rFCM. The regulation states that the plastic input must originate from plastic materials and articles that have been manufactured in accordance with Community legis- lation on plastic food	**Regulation 282/2008, Article 4** *Conditions for the authorisation of recycling processes* **& EFSA scientific opinions**	**Regulation 282/2008 Article 4** "In order to be authorised, a recycling process shall	EFSA recommends in the 2011 scientific opinion that as a pre-requisite, input based on containers coming from non-food uses should not intentionally be used. Practically EFSA holds that the proportion of non-food material in the input for recycling process should not exceed 5% in the case of PET (and 1% in the case of HDPE, EFSA J. 2015, 13, 4016). However, it is unclear how to count the allowed non-food materials, for example with the presence of multilayers, printing ink constituents and printed plastic packaging. And is calculated on post-consumer waste bales or on the shredded input to decontamination?			*Lack of Guidance*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
		11	The threshold reduces the (already scarce supply) of rPET.	Recycling (input: non-food)		Due to the physic-chemical properties of plastics Article 4c of Regulation 2008/282 imposes the condition that contamination of the input material must be addressed in order to ensure the integrity and safety of the rFCM. The regulation states that the plastic input must originate from plastic materials and articles that have been manufactured in accordance with Community legis- lation on plastic food contact materials and articles	**Regulation 282/2008, Article 4** *Conditions for the authorisation of recycling processes* **& EFSA scientific opinions**	**Regulation 282/2008 Article 4** "In order to be authorised, a recycling process shall comply with the following conditions: (a) the quality of	EFSA recommends in the 2011 scientific opinion that input for recycling process should contain no more than 5% of PET containers from non-food applications. This is based on the calculation / assumption that with this portion of non-food containers, also the highest average concentration level of contamination in non-food PET containers could be reduced. EFSA assumes th that only the collection of postconsumer PET from curbside or deposit schemes is able to reach this 95%. Even though the scientific opinion allows for a higher percentage of non-food recycling input as the evaluations of processes are based on a case by case analysis. In practice the 5% of non food-contact material is seen as a legally-non binding recommendation and indication. However this 5% recommendation is based on outdated assumptions. It has been shown that migration thresholds can be safely met even with higher proportions of non-food contact materials in the input. The threshold unnecessarily complicates the use of PCR from mixed collections in food contact as mixed collections with the current technological state are not able to reach 95% sorting effiiency.	D#17, D#6	The threshold reduces the (already scarce supply) of rPET.	*Efficiency legislation*	**Legal technicality issue**	Improve application	Other
N	The authorization for recycling processes is long and burdensome.	32	There are no clearly defined timelines, timeframes or deadlines for the European Commission's decision-making on the suitability of a recycling technology (granting or refusing authorisation of the recycling processes) or the establishment of the register	Recycling (authorization - process)	D#15, D#:	Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process.	**Regulation 282/2008,** *Article 5.2* Application for authorisation of recycling processes and opinion of the Authority & ***Article 13*** Transitional measures for the authorisation of recycling processes	**Regulation 282/2008,** *Article 5 2.* The technical dossier shall contain the information	EFSA has to issue an opinion within six months of receipt of a valid application as to whether or not the recycling process complies with the conditions laid down in Article 4. However such a deadline for the granting or refusing authorisation of the recycling processes is missing for the European Commission. The wording of article 13.6 is instead that the Commission has to **submit** the opinions to the Standing Committee on the Food Chain and Animal Health draft decisions granting or refusing authorisation of the recycling processes referred to in paragraph 1. This however does not give any clarity regarding the deadline for the granting of refusing the authorisation.		Provision 3,9,10 & 12 of 282/2008 are not in force	*Lack of necessary Rules*	**Legal objective Issue**	Reregulation	Change existing regulation
K	There is limited availability of quality SRM that are legally allowed for FCM/A and businesses can use	21	There is a lack of formal authorization of any plastic recycling process.	Recycling (authorization - process)		Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process	**Regulation 282/2008 Article 3** *Requirements for recycled plastic materials and articles*	**Regulation 282/2008 Article 3** "1. Recycled plastic	Despite this regulation being in force for over 10 years, and EFSA having published over 150 positive safety assesment on (mainly PET) recycling processes, the European Commission has not yet authorized any of them. All the positive opinions are thus awaiting European Commission's approval.		This regulatory environment provides legal uncertainty and does not fosters investments. To reach the circular economy goals and legal requirements sufficient recycling facilities for plastics that are legally allowed to produce FCM need to be available	*Effectiveness legislation*	**Legal technicality issue**	Improve application	Other
G	The (legal) possibilities, conditions and requirements) of SRM for FCM are (legally) limited or not sufficiently clear	33	There is no harmonized assessment procedure for recycled plastics	Scope: requirements			**Regulation 282/2008 Article 1.2** *Subject matter and scope*	**Regulation 282/2008 Article 1 (...) .2** "This	The scope of 282/2008 exlcudes certain recycling practices and certain uses of rPlastic from the scope. These recycled plastics can however without EFSA assessment and Commission Authorization still be used in FCM due to exclusion of certain rPlastics in the scope of Regulation 282/2008.			*Lack of necessary Rules*	**Legal objective Issue**	Reregulation	Change existing regulation
		22	Provision 3,9,10 & 12 of 282/2008 are not in force	Framework Legal status		Article 3 of Regulation 282/2008 imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process	**Regulation 282/2008: Article 13** *Transitional measures for the authorisation of recycling processes* . & **Article 16** *Entry into force:*	**Regulation 282/2008: Article 13** *Transitional*	Provisions 3,9,10 & 12 of 282/2008 are not in force because the European Commission has not yet submitted any draft decision according to Article 13 & 16. This thus means that Article 3 of Regulation 282/2008 that imposes the conditions that recycled plastic materials and articles must be obtained from an authorized recycling process is also not in force.		Plastic recyclates are mainly subjected to MS rules regarding use, requirements and conditions. Current used plastic recyclates in FCM could become illegal in the future (legal uncertainty)	*Efficiency legislation*	**Legal technicality issue**	Reregulation or Impr	Change existing regulation , Other
		34	The scope of Regulation 282/2008 is limited to only post-consumer polymers in direct contact with food	Scope: life cycle status			**Regulation 282/2008 Article 1.2** *Subject matter and scope* **& Provision 8**	**Regulation 28:**	The scope of 282/2008 exlcudes certain recycling practices and certain uses of rPlastic from the scope. There are however also recyclates deriving from other sources (post-industrial, pre-consumer), other recycling practices (chemical recycling), and in other use form (functional barrier). The requirements for recyclates falling outside of the scope of 282/2008 are not sufficiently clear.			*Lack of necessary Rules*	**Legal objective Issue**	Improve application	Provide Guidance or implementation documents
		35	There is no overall harmonized or positive list for substances that can be used in the manufacturing of FCM/A	Design					Food contact materials and articles can be constructed out of multiple substances. Plastic FCM/A may only be manufactured from substances (monomers, other starting substances and additives) that are contained in the "Union list" of authorised substances (10/2011). However, for the other non plastic substances there is no overall harmonized or positive list for example under Regulation 1935/2004. Nor is there a negative list. Member states can pose additional rules. Thhe nature and restriction of substances differ between Member states. It is in therefor unclear if, when and which substances and specifically which SRM can be used in which FCM/A in which country.	Simoneau a	Additional MS laws have an impact on the functioning of the internal market.	*Lack of necessary Rules*	**Legal objective Issue**	Reregulation	Change existing regulation
		23	Some recycled plastics outside of the scope of 282/2008 have to declare their content as 100% virgin.	Labelling		Consumers should not be misled by labelling as regards recycled content.	**Regulation 282/2008 Article 11** *Labelling of recycled plastic materials and articles*	**Regulation 282/2008 Article 11** "Voluntary self-declaration of the recycled	**Industry can issue information to the consumers about the recycled content. Regulation 282/2008** applies to FCM plastic materials and articles and parts thereof which contain recycled plastic. Article 11 of Regulation 282/2008 provides a labelling possibility for recycled plastic materials and articles: However, Regulation 282/2008 excludes certain plastic materials that contain recycled plastics from the scope. These Recycled plastics that are not covered by 282/2008 fall in a grey area as they are not considered recycled plastics under 282/2008, but are considered recycled according to Article 5 of FCM 1935/2004. As there is no definition of recycled FCM plastic in the FCM framework, material from a chemical depolymerized process must be treated as virin plastic. Their content then must be declare as	C#381, #38	The ability to declare recycled content on the packaging has an impact on the incentives to take up recycled articles and materials	*Effectiveness legislation*	**Legal technicality issue**	Reregulation	Change existing regulation
			The SML and the OML for multimaterial multi-layer material and articles are not harmonized by European Law	Multimaterial					More information needed			*Interconnection?*			
			There are no specific measure for multimaterials involving paper and board.	Multimaterial					More information needed			*Interconnection?*			
			The requirements for multi-material mulitlayer are unclear	Multimaterial					More information needed			*Interconnection?*			
H	The requirements to declare recycled content and label recycled materials are insufficiently clear.	44	Labelling requirements for recycled plastic materials and articles used behind a functional barrier or in multilayer material are unclear.	Labelling		Consumers should not be misled by labelling as regards recycled content.	**Regulation 282/2008 Provision 6, Article 1.2** *Subject matter and scope* . **Regulation 1935/2004 Article 3.2** *General requirements*	**Regulation 282/2008 Article 1.c"** This Regulation shall not apply to the following	Regulation 282/2008 excludes recycled plastic materials and articles in which the recycled plastic is used behind a plastic functional barrier from the scope. It is therefor unclear how to declare the content of recycled materials in case the recycled materials are used behind a functional barrier or in multilayer structure as there are no labelling requirements for these structures in Regulation 10/2011 and in 1935/2004 with the excepion of the the overall general requirement in 1935/2004 Article 3.2 that the labelling, advertising and presentation of a material or article shall not mislead the consumer.			*Lack of interpretation*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
		13	There is no coherent labelling scheme or usage information that facilitate the proper intended use of FCM by consumers.	Labelling	C#156	Incorrect use of FCM causes safety concerns	**Regulation 282/2008 Provision 6, Article 1.2** *Subject matter and scope* . **Regulation 1935/2004 Article 3.2** *General requirements*	**Regulation 1935/2004** ***Article 3 1*** **.** Materials and articles, including active and	FCM materials with recycled content can have limits in terms of food application such as temperature (microwave), time, but also regarding acid or fat in the food. Labelling should help users and consumers to use the materials and products properly to ensure a safe intended use.There are however no standardised pictograms and symbols to facilitate easy understanding of instructions and proper use of these products (e.g. usage in microwave/dishwasher, cleaning instructions, kinds of food not allowed to come into contact with the FCM, etc.)			*Efficiency legislation*	**Legal technicality issue**	Reregulation	Change existing regulation

			Current certification schemes for recycled plastics do not requiring a physical connection between input and output.	Labelling	D#39. D#63,		**Regulation 282/2008 Article 11** *Labelling of recycled plastic materials and articles*	**Regulation 282/2008 Article 11** Voluntary self-declaration of the recycled content in	Current certification schemes for recycled plastic material and articles do not requiring according to contributions a physical connection between input and output. This can lead to situations where the claim of recycled content for the final product is disconnected from the true recycled content. In some cases, there is not a physical connection between where the waste comes in and the product comes out, it could even be separate processes located in different countries. For example, some of the technologies base their business model on elaborate schemes to allocate credits from one plant to another. This means that the product only contains recycled material in theory. The recycled content in the finished product then only exists in theory and the ratio of recycled content in the finished product is not accurately indicated on a product level.		The calculation methods used for decleration of recycled content could impact greenwashing and impact incentives to improve recyclability of plastics and to increase the amount of recycled content in products, and the credibility of the recycling industry.	https://ecostandard.org/wp-content/uploads/2021/02/2021_zwe_joint-paper_recycling_content_m	Reregulation	Change existing regulation
O	There are no regulatory requirements or regulatory guidance for the recycling of non-harmonized materials such as paper, board	36	There are no regulatory requirements or regulatory guidance for the recycling of non-harmonized materials such as paper & board	Non-harmonzed recyclates (requirements & use)	Franz & Welle (2022)		**Regulation 1935/2004 Article 5** *Specific measures for groups of materials and articles*	**Regulation 1935/2004 Article 5.** "For the groups of materials and	There is an absence of harmonization of Regulation 1935/2004 Annex I articles and materials. Only 1. Active and intelligent materials and articles 10. Plastics and 12. Regenerated cellulose from Annex 1 are harmonized. Paper and board (9) are thus not harmonized. This means that there are no harmonzied regualtory requirements for the use or manufacturing or recycled paper and board or other recyclates that can be used in the manufacturing of paper and board. Furthrmore, relevant definitions and requirements are layed down in 10/2011 for example regarding SML, OML and NIAS and IAS.				*Lack of necessary Rules*	**Legal objective Issue**	Reregulation	Change existing regulation
R	The current framework and its interconnections with other frameworks is complex and hard to understand	45	It is unclear if exempted recycling processes area able to contribute to recycling quotas and targets for recycled content.	Interconnection	D#59, D#:	Artitcle 6 of Regulation 2019/904 imposes the condition that	**Regulation 2019/904 Article 6** *Product requirements*	**Regulation 2019/904 Article 6.5** With regard	It is unclear if the recycled plastics that are exluded by the scope of Regulation 282/2008 also count to targets from the SUP directive.	D#59, D#32			*Lack of interpretation and guidance*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
		46	There are no harmonized EoW criterea for Plastics	Interconnection	De Tandt	Substances present in waste can have an impact on the environment and human health	**Directive 2008/98 Article 6** *End-of-waste status*	**Directive 2008/98 Article 6** *End-of-waste status* "Member States shall take	Waste ceases to be waste as a result of a recovery operation. Recycling consist of different processing steps. The exact process step when waste ceases to be waste indicates under which framework a material falls (WFD or REACH). However, since there are no specific harmonised EoW-criteria for plastics, this is difficult for recyclers to identify which requirements apply to them.				*Lack of interpretation and guidance*	**Legal Clarification**	Improve application	Provide Guidance or implementation documents
			There is an overalap in scope the FCM framework and the Drinking Water Directive 98/83/EC	Interconnection	E#18, E#384 D#61				More information needed				*Interconnection?*			
P	There are no or not sufficient incentives for using recycled materials	37	There are no targets for the uptake of SRM in FCM other th	Market demand		Promote the market uptake of recycled materials to ensure the circular use of plastics	**Regulation 2019/904 Article 6** *Product requirements*	**Regulation 2019/904 Article 6.5** With regard to beverage bottles listed in Part E of	In Directive 2019/904 (SUP Directive) requirements for a mandatory minimum content of recycled plastic in beverage bottles are formulated. However, these mandatory minimum content requirements only apply to PET. There are no (minimum) uptake requiremes for recycled materials in FCM in non-PET beverage bottles situations formualted.		This has implication for the market demand for recycled materials that can be used for FCM, as well as waste management that takes FCM requirements into account.		*Lack of necessary Rules*	**Legal objective Issue**	Reregulation	Change existing regulation
			Virgin plastics are not taxed, nor are recycled plastics economically treated differently.	Market demand	de Tandt	Promote the market uptake of recycled materials to ensure the circular use of plastics	**Outdated:** The European Union has introduced a "plastic tax" as part of the EU recovery package. As of 1 January 2021, a contribution based on the non-recycled plastic packaging waste was introduced as a new revenue source to the 2021-2027 EU budg		Economical instruments can stimulate the uptake of recycled content. Not only directly but also indirectly as investment are needed in the value chain plastics value chain for innovation, new machinery, and the ecological design of plastic packaging.Taxation of virgin plastics – would be such an indirect stimulant to the uptake of recycled plastic.	EUPC, 202(	The taxation of virgin plastics would be an indirect stimulant to the uptake of recycled plastic. Such a tax could furhtermore create the necessary levers for investment in the plastics recycling industry that would allow for higher-quality recycling.		*Lack of necessary Rules*	**Legal objective Issue**	Reregulation	Draft / propose new regulation
	There is a lack of enforcement (on among others recycling processes and decontamination processes)		The requirements for official controls of recycling plants is insufficiently clear	Official Controls	Callaert, 2021, D#40		**Regulation 282/2008** ***Article10*** *Official Control*	**Regulation 282/2008 Article 10** 1. The official control of a recycling plant and converter	More information needed		No official controls of Recycling plants has taken place	Callaert, 2021				
			The requirements for official controls of recycling plants outside EU is insufficiently clear. E.g. how these recycled plastics shall be controlled if applied partially outside the EU	Official Controls	D#38, D#40, D#20, IA#61		**Regulation 282/2008** ***Article10*** *Official Control*	**Regulation 282/2008 Article 10** 1. The official control of a	The requirements for official controls of recycling plants outside EU is insufficiently clear. E.g. how these recycled plastics shall be controlled if applied partially outside the EU,who the competent authority is and obligations for importers of these materials.More information needed							
			Risk assessments of recycled plastics are not explicitely subject to control by National Competent Authorities	Official Controls					More information needed							
	The requirements for SRM and FCM with SRM deriving from Third countries are insufficiently clear		Requirements and obligations for recyclers located in non-I	Third Countries	IA#61, D#20, D#40				More information needed	D#2						
			Requirements for converters using SRM or FCM with SRM from non-EU countries are not sufficiently clear	Third Countries	IA#61, D#20, D#40				More information needed							