POINTING FINGERS

Extended Producer Responsibility as a potential tool to reduce the Dutch clothing surplus

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DECLARATION OF AUTHORSHIP
I hereby declare that I am the sole author of this report. I certify that the work
presented here is to the best of my knowledge and the result of my own inves-
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The vast majority of mid-price range segment apparel surplus arises in the post-consumer phase. The number of discarded items per capita is increasing and as the population continues to grow, so too will the apparel surplus expand. Brands and consumers are unwilling or unable to make radical changes at a national scale and are waiting for the government to become involved. The current collection and recycling volumes of apparel lead to insufficient incentives for producers or policymakers to strive for the optimisation of high-quality product and material reuse or recycling. Young Dutch consumers have a somewhat unconcerned attitude to disposal behaviour but may be encouraged by a deposit system or a door-to-door collecting system. However, the development of the collecting infrastructure and an increase in collecting volume does not necessarily mean that more products can be reused or recycled. This requires innovation in high-end recycling technology.

Tariffs imposed on producers should reflect the actual costs of managing their end-of-life products and therefore transparency is key for both these costs and for the production process. If EPR tariffs on producers are large enough to make a substantial difference, this may lead to reduced capacity to place products on the Dutch market, and eventually to a decrease in the Dutch surplus. In order to persuade producers to make different decisions when designing and marketing their products, a more advanced EPR scheme should be developed that creates benefits for those producers that make sustainable decisions. Unfortunately, none of the EPR schemes provide an answer regarding the possibility of decreasing the number of products placed on the market. There are still reasonable doubts on the part of both the government and consumers about the urgency and effectiveness of an EPR policy in the Dutch apparel industry. A mandatory EPR scheme in the industry would definitely reduce textile waste in terms of collecting it, lengthening the product lifecycle, and closing the circular loop. However, this loop does not have infinite load-bearing capacity and this study cannot prove that EPR would reduce the volume that enters the loop; it can only assume that EPR will strengthen the capacity of the apparel industry to be more conscious of the products that enter this loop and to be responsible for them.

Summary

Worldwide, 35 billion kg of garments become waste annually (Sweeny, 2016). Fashion is a complicated business involving many stakeholders, which makes it difficult to identify who is responsible for the disposal costs and the environmental impact of discarded clothes. An Extended Producer Responsibility (EPR) policy – an environmental policy that extends producers’ responsibility for their products to include their environmental impact and the costs of waste disposal – would enable the allocation of responsibilities within the industry. Due to the significant environmental impact of textile waste, it is remarkable that EPR regulations have not been implemented in the Dutch apparel industry.

The aim is to make apparel producers responsible for the waste they produce and to make the Dutch government commit to decreasing apparel surplus by implementing a mandatory EPR policy for the Dutch apparel industry. The main goal of the policy is to shift responsibility for garments that have become waste to the producers and enable an internalisation of the effects of consumption. The main research question is: What would be the effect of an EPR policy to reduce surplus apparel in the Netherlands? This question is separated into several focus areas: the current Dutch apparel surplus, EPR policies in other industries in the Netherlands, EPR implemented in the apparel industries of other countries, and the reasons for the absence of a mandatory EPR policy for the Dutch apparel industry. The research methods employed in this study are a literature review and in-depth semi-structured interviews with professionals from the fashion and waste-management industries.
Chapter 1: Introduction

A combination of policy ambitions, private entrepreneurship, and high population density has fostered innovation in the treatment and valorisation of waste in the Netherlands since the 1970s (Rijkswaterstaat, 2018). The Netherlands aims to sustain this leading role in its transition towards a circular economy by focusing on eco-design, waste prevention, reuse, remanufacturing, refurbishment and the high-value recycling of products (Dubois, 2016). In Dutch regulations on environmental conservation, Extended Producer Responsibility (EPR) has been implemented for a variety of products and waste streams, such as packaging, consumer electronics, batteries and float glass, though not for textiles (Graaf, 2016). The apparel industry is the second largest polluter in the world after the oil industry (Baeysens, 2016). Due to the significant environmental impact of textile waste, it is remarkable that EPR regulations have not been implemented in the apparel industry.

Extended Producer Responsibility

Extended Producer Responsibility (EPR) is an environmental policy that concerns waste management and the responsibility of producers for their products and packaging is extended to include their environmental impact and costs of waste disposal (Coopman, 2015). In addition, it involves producers in the physical aspects of waste collection and provides incentives for them to take account of disposal costs when they design and market their products (Suez, 2017). Over the years, it has been introduced worldwide for different waste streams in order to shift responsibility and enable an internalisation of the effects of consumption (OECD, 2005).

1.2 Rationale

Whether the surplus in the Dutch apparel industry is primarily caused by demand or by supply is debatable. The surplus comprises pre-consumer waste and post-consumer waste. Of the pre-consumer waste, part is donated to charity or sold at outlets; however, many apparel items are also destroyed as waste annually (Wang, 2010). In the post-consumer phase, 240 million kg of apparel is discarded in the Netherlands each year (Milieu Centraal, 2018). Worldwide, 35 billion kg of garments become waste annually (Sweeny, 2016). Fashion is a complicated business, involving long and varied supply chains of raw material, textile manufacture, production, shipping, retail, use, and, ultimately, disposal of items. For this reason, it is difficult to identify who is responsible for the disposal costs and the environmental impact. In this report, the current manner in which EPR is used in other countries and industries, and the possibilities and potential effects of applying this to the Dutch apparel industry, are researched to understand whether this may lead to a reduction in the volume of surplus of garments that are produced, consumed, and disposed in the Netherlands.

1.3 Aim

The aim is to make apparel producers responsible for the waste they produce and to make the Dutch government commit to decreasing apparel waste by implementing a mandatory EPR policy for the Dutch apparel industry in order to diminish the surplus of garments.

Therefore, this research report results in an advisory product for the Dutch Ministry of Economic Affairs and Climate Change to integrate an EPR scheme into the current legislation on waste management and recycling. The main goal of this advisory document is to shift responsibility for garments, once they have become waste, to the producers – the polluter pays principle (OECD, 1972) – and enable an internalisation of the effects of consumption by means of EPR. The focus lies on the companies and consumers in the mid-price range segment because of the short life-cycle of the products (Levitt, 2016).
1.4 Research Questions
Main question: What would be the effect of an EPR policy to reduce surplus apparel in the Netherlands?
Sub-questions:
1. What is the current surplus in the Dutch apparel industry and what causes this surplus?
2. How are EPR policies implemented in other industries in the Netherlands and what are the results?
3. To what extent is EPR implemented in the apparel industries in other countries?
4. What are the reasons for the absence of a mandatory EPR policy for the Dutch apparel industry?

1.5 Methodology
The primary research methods employed in this study are a literature review and in-depth semi-structured interviews with professionals from the fashion and waste-management industries. In the first stage of this report, the volume of the surplus of garments in the Netherlands is mapped out and the reasoning behind the emergence of this surplus is researched by consulting data from sustainability-oriented studies in the apparel industry with a focus on clothing volumes, and recent studies on 21st century consumerism.

In order to find out what kind of EPR schemes currently exist in the Netherlands and how they are implemented, books, online publications, and legislation are reviewed. The approach and results of the EPR policy for apparel products implemented in France is researched to act as a reference for its potential effect in the Netherlands (Henninger, 2017).

Semi-structured interviews with professionals are conducted to discover the cause of the absence of a mandatory EPR policy in the Dutch apparel industry. In order to present a broad perspective, these professionals include sustainability experts from the fashion industry and policy makers, in order to incorporate a legislative point of view. The professionals interviewed are Francien Aarts from the Ministry of Economic Affairs and Climate Change, Eva Mulders from Modint, Gwen Cunningham from the Amsterdam Fashion Institute, and Maurice van de Ven from the clothing collection organisation Sympany.

1.6 Structure
This report is divided into 6 chapters. The first chapter, as you have read so far is about the background, purpose and approach of this research.

- Chapter 2
In the first stage of this report, the volume of the surplus of garments in the Netherlands is mapped out from both a supplier and a consumer perspective.

- Chapter 3
Chapter 2 comprises research on the current implementation, possibilities, and results of EPR policies in the Netherlands. Here the various EPR schemes that currently exist in other industries are identified, and shows the effectiveness to sketch a feasible scheme for the Dutch apparel industry.

- Chapter 4
In the third chapter, EPR policies for apparel industries in other countries are researched. France implemented a policy for clothing, linen, and footwear (CLF) and this is the focus point in answering the sub-question, ‘To what extent is EPR implemented in the apparel industries in other countries?’ In addition, Eco TLC, the organisation behind the collecting, reusing, and recycling of CLF products is discussed.

- Chapter 5
The last stage is exclusively focused on the Netherlands as regards current and prior EPR developments. It discusses the reasoning behind the absence of a mandatory EPR policy in the Dutch apparel industry and the necessities for enabling its implementation.

- Chapter 6
The conclusion gives shows which EPR scheme is most suitable for the Dutch apparel industry, indicates how the Netherlands can learn from other countries and industries, and provides recommendations on how the industry should adapt to make a mandatory EPR policy feasible.
Chapter 2: Dutch Apparel Industry Surplus

In this chapter, the first sub-question, ‘What is the current surplus in the Dutch apparel industry and what causes this surplus?’ is addressed. The question is approached from both supplier and consumer perspectives. In this study, ‘surplus’ is defined as full garments that are discarded and is divided in two focus areas: 1. pre-consumer waste, and 2. post-consumer waste. Research on both areas is principally based on the year 2015 because of the availability of information on exact production, consumption, and collection quantities.

2.1 Pre-consumer waste

In this report, pre-consumer waste is defined as finished apparel products that do not reach the consumer or are unfit for sale at regular retail stores. A total of 6.5%, the equivalent of 21.5 million garments, was discarded as pre-consumer waste in 2015 (Euromonitor, 2016 1,2,3; Wijnia, 2016; Maldini, 2017). It is challenging for suppliers to meet consumer demand due to the globalization of apparel sourcing and intensified competition (Gereffi & Frederick, 2016). Retailers aim for low-cost apparel and seek flexible designs, quality, and quick deliveries (Bhardwaj & Fairhurst, 2010; Ghiani, 2013). Order quantities are influenced by lead times – the number of days between placing the production order and receiving the product in stores – which can vary considerably. Research shows that the shorter the lead time, the less inventory in stock is required and the smaller the unsold inventory (Hartman, 2012). For example, fast-fashion retailer Zara has a lead time of 15 days, while non-fast fashion retailers have lead times of between three and nine months on average (Wang, 2017). However, this generates a stark contrast: although fast-fashion might perform better in the pre-consumer phase, the opposite occurs when fast-fashion products end up in the post-consumer phase; this results in a shift in responsibility from producers to consumers. With the rise of fast fashion, new fashion items arrive in stores every week, which results in more purchases and discarded products (Hayes & Jones, 2016).

2.2 Post-consumer waste

Overconsumption of clothing has a significant environmental impact. Hence, there is a need to understand how consumers dispose of their unwanted clothes. Research from NCBI shows that adults aged forty and older are more likely to use products for a longer period and buy smaller quantities than young adults between the ages of 18 and 35 (Islam, 2017; Ann, 2013). Is this merely a matter of age? Or is it caused by the different circumstances in which these generations grew up?

Young consumers have a strong tendency to follow the latest fashion. In a recent study by Peeters (2017), young Dutch adults were questioned by means of surveys in order to examine the practical factors that motivate and influence their clothing disposal behaviour. What is striking is that disposal behaviour is primarily motivated by convenience; 64% of the respondents had once or more purposefully discarded apparel items in the residual waste bin instead of in a clothing collection bin and in so doing deprived this product of a new lifecycle (Peeters, 2017). A survey by Sobol (2018), conducted among 205 Dutch respondents from the ages of 20 to 35, researched more in-depth reasons for clothing disposal behaviour. According to this study, this behaviour is driven by a sense of belonging which creates a constant desire of newness to keep up with the trends of the admired tribe.

The volume of post-consumer textiles collected in the Netherlands has grown during the last years: 96,000 kg was collected in 2014; 107,000 kg in 2015; and 109,000 kg in 2016 (Maldini, 2017). The average number of items discarded annually per capita increased from 37 pieces in 2011 to 41 pieces in 2015 (Maldini, 2017; Zuijlen, 2015). This appears to be small change, however, when the difference is multiplied by the 17.02 million inhabitants of the Netherlands, an increase of more than 60 million garments in a period of four years becomes observable (CBS, 2018). In 2015, 600.8 million garments were discarded. As the population continues to grow, so does the volume of post-consumer apparel waste (CBS, 2015; Christopher & Lee, 2016). When reviewing the possibilities for reducing the surplus in the Dutch apparel industry, post-consumer waste substantially outweighs the number of garments in the pre-consumer phase, making post-consumer waste the most urgent focus area requiring improvement.
2.2 Post-consumer waste

Of all the post-consumer apparel produced, less than half is collected for reuse or recycling purposes (Maldini, 2017); this can partly be explained by the results of the study on the behaviour of discarding by Peeters (2017). Some products are not particularly suitable for reuse or recycling in the first place due to their quality, blended raw material content, or other factors; however, half of the products are not even considered for recycling, which is a big loss. In addition, this affects the conspicuousness of the urgency of an EPR policy as textile waste disappears almost unnoticed amongst residual waste. Current collection and recycling standards are based on the percentage of collected mass and therefore lead to insufficient incentives for companies and policymakers to strive for optimisation of the reuse of high-quality products and materials (Transitieteam Consumptiegoederen, 2018). If the volume collected were to increase, the need for innovation and improvement would also grow. Of the collected items, 60% are sold as second-hand goods in West Africa and Eastern Europe; 20% are used for insulation; 10% for cleaning cloth; and 10% are ends up as final waste and gets burned (Koppert, 2018).

2.3 Conclusion

The surplus generated from post-consumer waste, 600.8 million garments annually, substantially outweighs the surplus volume from the pre-consumer phase of 21.5 million garments per year. Fast-fashion companies might perform better than slow-fashion brands in the pre-consumer phase, but once the products are sold, these companies become the biggest troublemakers. The combination of the somewhat unconcerned attitude of the young Dutch consumer towards disposal behaviour and the strategies of the fast-fashion brands is alarming. The number of discarded items per capita is increasing and as the population continues to grow, the textile surplus will expand. What is worrying too is that half of the materials are wasted due to the inadequate disposal and collection of clothing. For the implementation of an EPR policy on apparel, it is important to make producers responsible for the actual volumes of waste they create – and therefore also collect all of this volume – in order to ensure that their financial or physical compensation can be used for reusing or recycling purposes.
Chapter 3: EPR in the Netherlands

This chapter addresses the sub-question, ‘How are EPR policies implemented in other industries in the Netherlands and what are the results?’ In Dutch regulations on environmental conservation, EPR is implemented for a variety of products and waste streams, such as plastic packaging, batteries, consumer electronics, and beverage bottles, but not for textiles (Dubois, 2016). This chapter maps out an EPR scheme – a practical overview of the collection, recycling and financing of a certain policy – for each of the abovementioned industries and reflects on the possibilities of applying this to the apparel industry.

3.1 EPR Schemes

Most mandatory Dutch EPR schemes, such as those covered under the EU, for example, WEEE (waste of electrical and electronic equipment) and packaging directives, are fee-based models (Raymond, 2017). The producer pays an upfront fee to the municipality or government proportional to how many products they place on the market, and this levy helps fund collection and recycling infrastructure where required. Producers have the option to establish and manage their own EPR scheme, but most choose to delegate this responsibility to a third party, a producer responsibility organisation (PRO) (Suez, 2017; Börner, 2016). An important element of EPR concerns the take-back targets: producers have to achieve targets for the collection and recycling of consumer waste.

3.2 Plastic packaging, metal packaging and drinking suits (PMD)

In the Netherlands, packaging producers and retailers are financially responsible for the whole chain from collecting to recycling PMD. Producers’ mandatory contributions are based on the volumes of products they produced. Municipalities have been mandated to separately collect plastic packaging since 2009 and PMD since 2017 (Milieu Centraal, 2018). For the PMD waste-collection methodology, municipalities may opt for either door-to-door collection or central drop-off facilities. The popularity of collecting PMD waste door-to-door has substantially increased in recent years due to its efficiency (Dijkgraaf, 2014).

Recycling costs depend on the quality of PMD waste collected (Watkins, 2017); nevertheless, the cost of the collection, separation, sorting, and recycling of PMD waste outweighs the revenues that are generated from the sale of recycled PMD material (Da Cruz, 2014). Therefore, municipalities are compensated by the producers with €677 per ton of household PMD waste collected. The recycling costs and the yield of recycled apparel also varies strongly due to the wide range of materials. Therefore, a more advanced system of fees with benefits granted for sustainable choices (regarding raw material, reusability, sortability, recyclability, etc.) is essential for the design of an EPR scheme for the Dutch apparel industry.
In 2014, 50% of packaging plastics were collected, which is more than double the legislated EU goal of 24% and more in line with the plan for 2030 to collect 56% (KIDV, 2016; Börner, 2016). Reviewing collecting facilities for apparel items, central drop-off locations arose in the 1980s, however, as mentioned in Chapter 2, this has led to the collection of only half of all post-consumer apparel waste (Maldini, 2017). What is remarkable is that it took the plastic industry only five years to collect half of all the items, while it took 25 years for the apparel industry to achieve this. Of course, these are two very different fields, but given the large difference in the number of years, it is fair to conclude that waste collecting volumes could increase with the implementation of EPR.

According to the disposal behaviour research by Peeters (2017), more than half of the young consumers are not always willing to make an effort to go to central drop-off locations (Peeters, 2017). It would be very interesting to see how the collecting volumes of clothing change when municipalities are mandated to pick up clothing door to door, monthly, on a national scale.

Figure 1: Simplified representation of Dutch PMD scheme – Source: own creation
3.3 Waste of electrical and electronic equipment (WEEE)

The European EPR policy on WEEE (waste of electrical and electronic equipment) is similar to the Dutch PMD scheme. Producers are responsible for the end-of-life management of their products and finance the whole chain from collecting to recycling; however, they do not have to set up their own collection points. There is one big difference though: the collecting system differs (Cahill, 2017).

The Dutch network of WEEE collection is managed by municipalities through collection at retailers, reuse centres and scrap dealers. This results in the collection of 3.2 million tons WEEE which is only slightly more than one third of the total of 9 million tons that are generated in the Netherlands (Baldé, 2015; He, 2016). This relatively low proportion could be due to a lack of motivation by consumers to take action in order to properly discard the products at collecting facilities. Of this 3.2 million tons, 60-70% is suited for recycling or reusing (Sander, 2007; Defillet, 2013; Salhofer, 2016).

Figure 2: Simplified representation of Dutch WEEE scheme – Source: own creation
3.4 Beverage bottles
The current Dutch deposit system for beverage packaging covers large PET bottles, small refillable soft-drinks bottles, and refillable beer bottles. The monetary value of the deposit varies from €0.10 to €0.25 per item. Collection points are located at supermarkets and wholesalers. In 2016, 650 million beverage bottles were placed on the market, of which 95% were returned to supermarkets for the reclamation of deposits (Stichting Ons Statiegeld, 2018). The plastic bottles are suitable for recycling up to ten times and the glass bottles can be recycled endlessly (CE Delft, 2017). High recyclability is a strength of the beverage-bottle EPR scheme, which seems less feasible for clothing due to the wide range of raw materials used and the varying quality of the products.

The deposit system costs the producers €0.05 per bottle; however, due to the high quality of recyclable material that creates revenue, the final cost amounts to €0.0125. Every bottle that is not returned saves €0.0125 and is paid by the consumer (Stichting Ons Statiegeld, 2018). Of the 750 million bottles that are not part of the deposit system, approximately 150 million items ended up as litter each year between 2008 and 2014 (Salhofer, 2016). The difference between the number of bottles that are returned as part of the deposit system and number that are not part of it and are discarded as residual waste instead of as PMD waste is remarkable. This could potentially also strongly influence the volumes of apparel collected.

3.5 Conclusion
An obligation for municipalities to collect clothing door to door might increase the volume of recyclable clothing. However, collecting more does not instantly result in more recyclable material. Recycling costs and the yield of recycled materials vary considerably. Therefore, a more advanced EPR scheme should be developed that creates benefits for producers that use sustainable raw materials, trimmings, and dyeing processes, enabling easy sorting and focusing on reusability. Unfortunately, none of the EPR schemes have an answer for the possibility of decreasing the number of products placed on the market.

In every Dutch industry that has an EPR scheme, third parties take care of the collecting and treatment of the products, which seems to be the most efficient and effective way. This leaves producers with only financial obligation and no physical responsibility. However, this does not mean that they actually take this responsibility themselves. Producers may include EPR costs in the wholesale and retail prices of the products and let consumers carry the costs of EPR. This is exactly what may happen to clothing items too, which creates doubts about whether producers are actually responsible when they implement an EPR policy. When comparing the different Dutch EPR schemes, a deposit system is the most effective and efficient way to collect waste. This could decrease consumers lack of motivation to discard apparel at collecting facilities, increase collecting volumes, and therefore be an incentive to strive for the optimisation of high-quality product and material reuse. The remaining question is: how responsible will apparel producers be if EPR costs are included in the retail price?
Chapter 4: EPR in Apparel

This chapter answers the sub-question, ‘To what extent is EPR implemented in the apparel industries in other countries?’ Surprisingly, even though Japan and the UK are the frontrunners in the field of waste management, only France appears to have implemented a mandatory EPR policy that includes clothing. Among 13 other schemes, such as furniture and healthcare waste, a Clothing, Linen and Footwear (CLF) EPR scheme is used in France. This is analysed in the first section of this chapter. In the second section, the results that are generated by this policy, and in the third, the organisation behind collecting, reusing, and recycling of CLF products, Eco TLC, are discussed.

4.1 France EPR – CLF Scheme

As part of France’s commitment to complying with the European environmental standards regarding sustainable waste management, an EPR scheme has been set for the producers of clothing, linen, and footwear. Suppliers are considered responsible by law for providing for or managing the recycling of their products at the end of their useable life. They can either organise their own recycling programme that must be approved by French public authorities or contribute to an organisation accredited by law to provide such a programme (Cercle National du Recyclage, 2012). Producers have to pay tariffs to the Producer Responsibility Organisation (PRO) based on the amount and size of the pieces of clothing, linen, and footwear that they bring on the French market (Ministère de la Transition écologique et solidaire, 2017). This is a very interesting system, not only because tracing clothing in the post-consumer phase is challenging and this system avoids the risk of being unable to discover who was responsible, but also because it could potentially decrease the number of items that are placed on the market. If the tariffs are high, producers would probably think twice about production quantities, and if there are substantial benefits to be derived from sustainable options, this might lead to more conscious decisions. This could potentially lead to there being fewer items on the market, to less consumption and discarding, and to a decrease of the surplus. However, the required size of the tariff that would enforce actual change requires further research. The current tariff levels in France change annually to cover the required support, which is described in 3.3. The unit price per piece in 2018 is as follows:

- Very small items such as socks, gloves, ties, washcloths, and napkins: €0.001, excluding VAT.
- Small items such as adult underwear, T-shirts, tea towels, and flip-flops: €0.005, excluding VAT.
- Medium-sized pieces such as adult sweaters, tablecloths, and shoes: €0.008, excluding VAT.
- Large pieces such as suits, jackets, coats, and blankets: €0.05, excluding VAT. (Metteurs, 2018)

Although such tariffs, together with the yield from the resale of reusable and recyclable products, are sufficient to finance the required support for the collecting, sorting, recycling, and reselling CLF products, it is doubtful whether the financial consequences would actually make a difference to the decisions that producers make. On one hand, the tariffs are very low; on the other hand, if this were applied on the large scale of the fast-fashion companies that generate the most surplus, these small amounts combined form a large total value.

4.2 Results

In 2016, of the 9.9kg CLF per capita that was discarded in France, 3.2kg was collected, of which 59.4% could be reused and 31.8% could be recycled. On one hand, only a little under one third of the total disposed CLF products was collected, which is not that much, and therefore there is a need of a more effective collecting system to increase collecting volumes. On the other hand, that the collection rate grew from 2.7 kg in 2014 to 3 kg in 2015 shows effectiveness of the policy (Cercle National du Recyclage, 2012; French Ministry of Environment, 2016; Ministère de la Transition écologique et solidaire, 2017). Numerous national and international fast-fashion brands that are established in France – such as H&M, Zara, Sézane, and Maison Cleo – have been unable or unwilling to share information on whether their quantities of CLF products on the French market has decreased as a result of the implementation of the CLF EPR policy.
4.3 Eco TLC
Eco TLC is the only organisation accredited (since 2009) by French public authorities to collect CLF products and to enable their reuse or recycling. Eco TLC is a not-for-profit private company that aims at 100% reuse and recycling of used CLF items (Hvass, 2014). Currently, Eco TLC represents more than 93% of the industry. There must be advantages for the vast majority of the companies to outsource collecting and recycling to Eco TLC as only 7% do it themselves.

Tariffs are used to support all the sorting organisations that fulfil the Eco TLC requirements, projects that are selected by a scientific committee to find new solutions to recycling used CLF, and communication campaigns to increase consumer awareness (Metteurs, 2018; Ministère de la Transition écologique et solidaire, 2017). In order to incentivise companies that use recycled fibres, all products that contain a minimum of 15% recycled fibres receive a 25% discount on the tariff for these products, and a 50% discount for a minimum of 30% recycled fibres. This is in line with the need for a more elaborate scheme, as mentioned in Chapter 2, with financial benefits for sustainable choices, though is still very limited. Companies that sell fewer than 5,000 items or make less than €750,000 per year are entitled to compensation of a basic €36 plus VAT instead of paying per item (Metteurs, 2018).

4.4 Conclusion
Tariffs that are paid upfront could result in a change in the decision-making process for producers in terms of their collection composition and product quantities. Determining the required level of tariffs necessary to persuade producers to make different decisions that will lead to a decrease of the surplus requires further research. The low tariffs on producers of the French CLF scheme indicate that reusable and recyclable products are very valuable and generate substantial revenue because the yield from selling these materials, together with these tariffs, are high enough to cover the costs.

Only two discount options for sustainability benefits for producers are implemented in the French CLF EPR policy, which is very limited. It would be very interesting, and also necessary, to incentivise conscious choices by producers by designing a more advanced scheme with financial advantages for sustainable decisions as these concern the Dutch apparel industry.

Although the French CLF EPR scheme is successful in decreasing waste, the volumes collected and the recycling developments are in need of improvement in order to effect radical changes at a national scale. The implementation of a deposit system may increase collection volumes, as has been observed with the success of a deposit system for beverage bottles. Increasing the volume of apparel items collected may increase the urgency for high-end recycling developments that can be financed by EPR tariffs.
Chapter 5: The Absence of EPR in Dutch Apparel Industry

Chapter five outlines the reasoning behind the absence of a mandatory EPR policy in the Dutch apparel industry. Opinions and the knowledge of professionals from various backgrounds are discussed. This forms a broad perspective that includes points of view concerning sustainability, fashion, business, collecting, and legislation.

Maurice van de Ven is an innovation specialist at Sympany, one of the Netherlands’ largest textile collecting organisations that gathers approximately 23.5 million kg of textiles per year from central drop-off locations across the country (Sympany, 2018). Van de Ven regularly attends meetings on innovative solutions to waste management with municipalities and ministries where EPR has often been a topic in recent years; however, it appears as though talking about it is all that ever comes out of such meetings. He describes the motive for the absence of an EPR scheme as ‘a political theatre’ and thinks there is no actual, accurate reason for it.

Francien Aarts from the Ministry of Economic Affairs and Climate Change thinks differently and claims that the reason for the absence of an EPR policy is that stakeholders in the sector are not convinced that EPR would lead towards higher quality production, consumption, and recycling. She explains that this has to do with the collecting and sorting deficit, the unappealing circumstance of EPR as an extra cost for international fashion brands considering settling in the Netherlands, and difficulties in closing loopholes and tracing free riders, for example with online sales (Rijksoverheid-1, 2018). The deficit in collecting and recycling facilities could possibly be financed by tariffs that are part of an EPR scheme, according to Gwen Cunningham, sustainability coordinator at AMFI. Cunningham (2018) explains that it is necessary to raise funds that can finance the collecting infrastructure and high-end recycling technology. Aarts also states that there is a lack of transparency, since the clothing and textile manufacturing industry has almost completely disappeared in the Netherlands. Over the past decades, clothing and textile production has principally taken place in low-wage countries, resulting in complex and often opaque supply chains (Dubois, 2016). Transparency is also required to cover EPR costs, from both a performance and a cost perspective, in order to guarantee reasonable compensation from producers for the use of municipal infrastructure (Da Cruz, 2014).

Transparency could also be helpful in providing insight to the cost price calculation. According to Peter Koppert, senior consultant at Modint, EPR would not lead to financial responsibility for producers but for consumers, as he expects producers to pass EPR costs on to the wholesale and retail prices, as mentioned in the previous chapter. He claims that this leads to a negative price effect towards consumption. This contradicts ‘the race to the bottom’, the intense competition for price and margins that producers battle with in order to generate lower prices than their competitors (Cahill, 2017). Therefore, producers may also decide to retain EPR costs as their own responsibility – as it should be – in order to keep the retail price as low as possible, which in turn places higher pressure on margins. This could subsequently lead to lower production quantities, resulting in fewer products being placed on the market, less consumption, and, in the end, a smaller surplus of garments in the Netherlands.

Figure 6: Simplified representation of the potential consequences of EPR costs
Source: own creation
At the moment, the urgency is still insufficient for Dutch companies to change the offer of apparel, according to Koppert. Consumers have become used to very cheap apparel and still lack knowledge, awareness, and motivation to change the demand for apparel to sustainable buying behaviour (Brouw, 2017). The demand for sustainable and circular products is insufficiently explicit. On one hand, there is the perception that brands do not want EPR since it means new costs and places post-sale responsibility on them, and it allows them to ignore the end-of-life impact (Kerr, 2017). However, on the other hand, many brands want to be incentivised to make more sustainable choices and are waiting for government to become involved, according to Cunningham (2018).

Koppert (2018) awaits the launch of the Transition Agenda for Consumer Goods, a report on large system changes that must take place to make the transition from a linear to a circular economy, which will be published at the end of 2018 by the transition team of consumer goods. The report will contain new revenue models, return systems, and new chain forms as well as a plan by the Dutch government to execute its own research on EPR (Rijksoverheid, 2018). According to Van de Ven (2018), due to the latest recycling developments, implementing a deposit system for apparel waste would only succeed if it were implemented within the next three years: new technologies enable precise waste separation at recycling (Sévaux, 2017). This being the case, Van de Ven (2018) pictures a clear transition from waste separation at the consumer end to separation at recycling facilities once all the waste has been collected, what is referred to as backward separation. In the municipality of Gulpen-Wittem in Limburg, backward separation structurally saves €70,000 per year (Sévaux, 2017). A counter argument to this is that though this might be a workable system for many materials, the condition of textiles can drastically decrease when they come into contact with other waste, such as tomato sauce.

Conclusion

Whether it is described as ‘a political theatre’ or a well-considered deliberation, there are still reasonable doubts about the urgency and effectiveness of an EPR policy in the Dutch apparel industry. One of the reasons, the shortage of collecting infrastructure and recycling technology, could be solved by the yields from tariffs on producers generated by an EPR policy. Transparency is a necessity for the financial insights that are required to allow successful implementation. Transparency also seems to enable a decrease in the surplus of Dutch apparel. Brands and consumers are unwilling or unable to make radical changes on a national scale and are waiting for the government to become involved.
6. Final Conclusion

Fashion is a complicated business, involving long and varied supply chains of raw material, textile manufacture, production, shipping, retail, use, and, ultimately, the disposal of items. For this reason, it is difficult to identify who is responsible for the disposal costs and the environmental impact of discarded clothes. An EPR policy enables the allocation of responsibilities within the industry; however, could it also be used as a tool to reduce the surplus of garments in the Dutch apparel industry?

The vast majority of the surplus caused by mid-price range segment companies arises in the post-consumer phase. These brands perform well in the pre-consumer stage due to their short lead times and quick response to the market; however, their garments are discarded almost as quickly as they are purchased. The number of discarded items per capita is increasing and as the population continues to grow, so will the textile surplus expand. Brands and consumers are unwilling or unable to make radical changes on a national scale and are waiting for the government to become involved.

Young Dutch consumers have a somewhat unconcerned attitude to disposal behaviour. The current collection and recycling volumes of apparel lead to insufficient incentives for producers or policymakers to strive for optimisation of high-quality product and material reuse or recycling. Consumers may be encouraged to increase this volume by a deposit system or a door-to-door collecting system, as has been observed with the success of these two collecting systems for beverage bottles and PMD waste management. However, the development of the collecting infrastructure and an increase in collecting volume does not necessarily mean that more products can be reused or recycled. This requires innovation of high-end recycling technology. In order to develop these facilities, funds are required, which could be financed by the producers through the revenue generated by an EPR policy.

Producers’ fees should reflect the actual management costs of their end-of-life products and therefore transparency is key, both for costs and performances. Transparency could prove whether producers would actually be responsible for these costs or would pass these on to the consumer. If EPR tariffs on producers were high enough to make a substantial difference, this might lead to reduced capacity to place products on the Dutch market, and eventually to a decrease in the Dutch surplus. In order to persuade producers to make different decisions when designing and marketing their products, a more advanced EPR scheme should be developed that creates benefits for producers that choose sustainable raw materials, trimmings, and dyeing processes, easing sorting and focusing on reusability. The question that remains is: how high and advanced does this tariff need to be in order to make a difference? Unfortunately, none of the EPR schemes give an answer regarding the possibility of decreasing the number of products placed on the market. In terms of incentivising producers to make sustainable decisions when designing and marketing their products, an advanced scheme with financial advantages for sustainable choices regarding raw materials, reusability, sort ability and recyclability for the Dutch apparel industry is essential.
There are still reasonable doubts about the urgency and effectiveness of an EPR policy in the Dutch apparel industry, and both the government and consumers still have a long road ahead. Of course, EPR schemes are only one instrument in the toolbox. In answer to the question ‘What is the potential effect of an EPR policy on reducing the surplus of garments in the Netherlands?’: a mandatory EPR scheme in the Dutch apparel industry would definitely reduce textile waste in terms of collecting, lengthening the product lifecycle, and closing the loop. However, this loop does not have infinite load-bearing capacity and this study cannot prove that EPR could reduce the volume that enters the loop; it can only assume that EPR will strengthen the capacity of the apparel industry to be more conscious and to be responsible for the products that enter this loop, which leads towards the following scheme (Figure 5) for the Dutch apparel industry:

This Dutch apparel EPR scheme includes a deposit system to increase collecting volumes, requires collaboration by the government with an organisation that takes care of collecting and sorting apparel, and stimulates innovation in high-end recycling technology and the reuse of garments. Consumers bring discarded apparel back to the supplier and receive their deposit back. The product then goes to an organisation such as Eco TLC and is sorted for reuse, recycling, or waste disposal. Reused items are resold as second-hand goods with a new deposit, and recyclable materials are recycled and used for new products. Tariffs on producers are used to support all the collecting, sorting, reusing and recycling facilities, projects to find new solutions to recycling, and communication campaigns to increase consumer awareness. This scheme contributes to decreasing the Dutch apparel surplus by maximising the reusability of products and raw materials and minimising value destruction.

Figure 5: Sketch of the most feasible Dutch apparel EPR scheme – Source: own creation
Suggestions for further research

In the course of this study, many questions have arisen which have generated suggestions for further research:

- Insight into the potential threat of fewer international fashion brands settling in the Netherlands due to the responsibility and costs of an EPR policy.
- Solutions regarding online shopping on sites from countries that do not have an EPR policy and so avoid EPR costs, and researching whether this affects offline sales.
- Insight into the level of tariffs required to effect a change in supply quantities.
- Changes in collection composition and supply quantities in the French market due to the implementation of the CLF EPR scheme.
- Profitable opportunities from reusable and recyclable products and materials.