CIRCULAR ECONOMY
POLICY PACKAGE FOR
THE TEXTILE SECTOR
Circular Economy Policy Package for the Textiles Sector
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The R2Pi project: The route to circular economy, a three-year research project, was launched in October 2016 under the European Commission’s Research and Innovation programme, Horizon 2020. Its overarching goal is to accelerate the widespread implementation of a circular economy, based on successful business models and effective policies. The aim is therefore to develop sustainable business models (CEBMs) and guidelines that will facilitate this transition and to propose policy packages supporting these sustainable models.

The Circular Economy (CE) is defined by R2Pi as follows: “In a circular economy, the value of products and materials is maintained, waste is avoided, and resources are kept within the economy when a product has reached the end of its life.”

R2Pi research is focused on the application of CEBMs in six sectors: Construction, Electronics, Food, Plastics, Textile, and Water. This pamphlet describes the Textiles Sector.

Along with the business case studies, which exposed CEBMS, the Circular Economy Policy Package is a key product of the R2Pi Project. The Textile Policy Package is based on the project’s accumulated knowledge about the transition towards the CE and contributes to the development of policies to promote CE linking economic growth and social prosperity, while promoting the efficient use of resources, through the facilitation of CEBMs.

Please see the R2Pi Website, “Sectors” section, for the key results of the Textiles case study.
The textile industry is one of the most polluting sectors in the world. Water pollution, the use of toxic chemicals, human exploitation, and high levels of textile waste are just a few examples of the impact that the industry has on the environment. Fast fashion in particular, which prioritises the speed of production and low costs, significantly contributes to the waste generated within the industry. This method of production also has implications for the consumption side of the industry, where consumers are observed to buy higher quantities of clothes of lesser quality, contributing to shorter clothing lifespans and increased waste. Moreover, due to the international expansion of fast fashion brands, this problem is present on a global scale. Thus, the adoption of circular business models by fashion companies is important and provides many opportunities to improve the environmental impact of this industry. Yet, due to the complex supply chains and the high level of competitiveness in this industry, changing from a linear to circular business model is challenging.

Circular business models seek to address these problems and mitigate them. The aim is to implement innovations and initiatives that both reduce the consumption of resources and also keep the products, their parts and their materials in use for as long as it is feasible. The R2Pi project has conducted research in order to provide insights that can help this transition to circular business models.
CEBM of the Textiles Companies from the Case Study

Within the textile industry, the R2Pi project focused on two companies. The first is MUD Jeans, a Dutch denim company which leases their products instead of selling them. The second company is the Spanish multinational clothing company Inditex – one of the largest fashion groups in the world. Some of the insights and policy recommendations generated by these two organizations and that fed into the design of this policy package is as follows:

**MUD Jeans** is a Dutch retail/fashion company where customers can lease or buy jeans. Customers who have leased or bought jeans are contacted after one year to ask whether they would like to keep, switch, or send back their jeans. Jeans that are returned by customers are upcycled when possible as a higher value product, vintage jeans, and are re-sold. If jeans are torn through wear, MUD Jeans repairs them at no additional charge. All 7 Circular Economy Business Models (CEBM) are applied by MUD Jeans as jeans are repaired to extend their use (**re-condition**), worn jeans are turned into vintage jeans and sold (**remake**), jeans are available for lease and there is no need to own them (**access**), jeans are made from high-quality fabrics, so last much longer (**performance**), the metal parts from jeans are input for another company’s value chain (**co-product recovery**), customers are asked to send jeans they don’t use to MUD Jeans (**circular sourcing**), and customers return their jeans to MUD Jeans when they don’t wear them anymore (**resource recovery**).
**Inditex** is an international organization that operates in the textile manufacturing industry, often under the brand name Zara, with head offices in Spain. Inditex is increasing the number of products in its collections that use renewable and circular raw materials (**circular sourcing**) in Spain. One of the primary ways that Inditex is implementing circular economy business models is in its implementation of **co-product recovery**. In this case, textile waste from Inditex factories is recycled and added to virgin materials to develop new fibres, which are then used in further garment manufacturing processes. Additionally, Inditex facilitates the disposal of unwanted clothes at select store locations. These clothes are donated to non-profit organizations, where the used clothes are recycled into new fabrics, or marketed in order to finance the social projects developed by these non-profit organizations, and also supports other organizations in a number of markets to set up urban garment collection systems.
CIRCULAR ECONOMY POLICY PACKAGING FOR THE TEXTILES SECTOR

Policy Packaging: Aim and methodology

Policy Package is a combination of policy instruments designed to address one or more policy objectives. Through a combination of policy instruments, a Policy Package should result in meeting goals that otherwise cannot be met with a single policy instrument. Policy Packages utilize positive synergy effects between policy instruments while avoiding contradictory or negative unintended effects. They are also designed to increase public acceptance of policies — social acceptability — and to achieve political compromises — political acceptability. Thus, Policy Packages facilitate both (1) effectiveness and (2) implementability of the desired policy goals.

In order to design a Policy Package, several stages of development and refinement are defined (Figures 1 and 2). Initially, a “Basic Package” of policy instruments is created. The Basic Package is designed in order to directly achieve the desired policy goals. It is the result of a process in which many individual policy instruments are assessed based on their characteristics of 'effectiveness' and 'implementability'. Based on these characteristics, the most promising instruments are identified. Then, preconditions to the implementation of these promising instruments are identified, as well as instruments which may facilitate the effects of these policy instruments, or have synergetic effects with them. Finally, potential contradictions among instruments are identified. Based on these elements, the Basic Package is formed.
At the second stage, the “Effective Package” formulation, primary and ancillary instruments are removed and added, respectively, to enhance the net effectiveness of said Package. This is done to maximize the benefits of the Policy Package, while taking into account rebound and other unintended effects. To do this, causal mapping is used, a technique that (graphically) illustrates the mechanisms through which a policy instrument may affect the policy goal and by that anticipate unintended effects. In addition, insights produced are validated via expert interviews.
Figure 2: The Effective Package for the textile sector

Identification of rebound and other unintended effects

Causal mapping technique
Basic Package for the Textiles Sector

The process of comprising the Basic Package for the textiles sector followed a series of steps in which 79 policy instruments were outlined, scored (according to ‘effectiveness’ and ‘implementability’ criteria) and reviewed (according to their relevance for EU member states).

The inventory of policy instruments was created with the goal in mind of promoting the uptake of Circular Economy Business Models (CEBM) for the European textiles sector, resulting in:

- An increased use of input materials that are safe, healthy, allow cycling and avoid negative impacts during production, use and after-use phases.
- An increased quantity of clothes and textile products that are designed, sold and used in a way that breaks free from their increasingly disposable nature.
- An increase in collected and recycled end-of-use textile materials in order to retain their value and reduce their negative impacts of their disposal.
- A more effective use of available feedstock resources, i.e. combining primary AND secondary raw materials to produce the same number of garments, to fully re-cycle cut-off textiles.
- A shift to renewable inputs.
- An improvement to value chain collaboration to resolve system-level problems.

The inventory of policy instruments was then reduced to a list of the 29 policies with the best potential for being effective and implementable.
Based on the scores for each policy instrument ‘Low-Hanging Fruits’ were identified to establish the Basic Package. ‘Low-Hanging Fruits’ are easy to implement and effective instruments. Then, a Matrix, to identify relationships between pairs of instruments (synergies, pre-conditions, facilitation and contradictions) was created. Contradictory instruments, identified by the Matrix were eliminated in the second phase of this process that aimed at grouping policy instruments and identifying patterns.

**Effective Packages for the textiles sector**

Each proposed policy instrument for the Basic Package may have unintended effects that will erode or eliminate its actual net effectiveness with respect to the defined policy goal. Therefore, a causal mapping technique was used to anticipate these unintended effects and mitigate them by adding supporting ancillary policy instruments or removing instruments from the Basic Package. Ancillary instruments were considered in order to facilitate the function of one or more policy instruments and thus affect the policy goals, indirectly by facilitating implementation.

With the above aims in mind, the Effective Package was created based on the modifications to the Basic Package. In essence, the causal mapping, with inputs from experts and stakeholders, led to the identification of policy instruments that should be added, removed or modified. The result of this process was the Effective Package which is comprised of policy measures with the following **five** themes: **integration** (measures cutting across the value chain), **investment** (government investment), command and control (regulatory), **market-based** (financial incentives / disincentives) and **encourage-voluntary** (measures to encourage stakeholders to police their own behavior).
A GLANCE AT THE TEXTILES POLICY PACKAGE

The Effective Policy Package for the Textiles Sector

Based on the above analysis and combined with our experts' judgment together, as well as inputs from extensive fieldwork, the following Effective Policy Package was designed: The effective package organized into the 5 themes mentioned showing synergetic and facilitation relationships, respectively (Figures 3 & 4).

<table>
<thead>
<tr>
<th>No</th>
<th>Policy Measures</th>
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<tbody>
<tr>
<td>3</td>
<td>Ban on the use of any input materials that contain toxic ingredients.</td>
</tr>
<tr>
<td>11</td>
<td>Incentivize material innovations that prevent plastic microfiber shedding during production and use phase.</td>
</tr>
<tr>
<td>15</td>
<td>Lower import taxes on recyclable garments and textiles.</td>
</tr>
<tr>
<td>18</td>
<td>Drive demand by installing green public procurement policies for textiles.</td>
</tr>
<tr>
<td>36</td>
<td>Promote/incentivize the use of clothes rental services.</td>
</tr>
<tr>
<td>52</td>
<td>Incentivize the development of strategically located recycling hubs.</td>
</tr>
</tbody>
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Implement Extended Producer Responsibility, including penalties to compensate the costs of negative externalities such as pollution or health impacts on workers.

Make secondary raw materials more cost competitive by lowering taxes.

Create a fund (grants, scholarships etc.) towards the R&D of new production, sorting and recycling technologies.

Lower taxes on labour to enable the manual sorting work to stay in Europe.

Invest in regenerative farming methods for organic-cotton and other cellulose-based fibres which do not use synthetic pesticides or fertilisers.

Accelerate the collection, sorting and recycling of industrial and post-consumer textile waste.

Enable cross industry collaborations.

Support the open source sharing of implemented methodologies in order to build collaboration at scale.

Align existing industry and certification standards into one European benchmark and make adherence mandatory for all European manufacturers and brands.

Increase market surveillance combined with high fines or other penalties.
<table>
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<tr>
<th>Number</th>
<th>Policy Instrument</th>
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<tr>
<td>300</td>
<td>Adapting the waste definition for export to producing countries of semi-finished products, such as clean fibres, clippings and sorted textile residues and other reusable post-consumer waste fractions.</td>
</tr>
<tr>
<td>400</td>
<td>Impose a ban on textile waste incineration and landfilling.</td>
</tr>
<tr>
<td>500</td>
<td>Drive consumer awareness and engagement.</td>
</tr>
<tr>
<td>600</td>
<td>Prescribe a certain % of recycled content in textiles.</td>
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*Policy instruments were numbered at the early stage of the Basic Policy Package and each instrument 'kept' its number throughout the process, allowing the policy team to trace each instrument at each stage of the Policy Packaging.*
Figure 3: The Effective Policy Package: Synergetic relationships

*Measures # 100, 200, 300, 400, 500 and 600 are ancillary measures, therefore don’t appear in this map.
Figure 4: Effective Policy Package: Facilitations relationships

*Measures # 100, 200, 300, 400, 500 and 600 are Ancillary measures, therefore don't appear in this map.
CONCLUSIONS

The Circular Economy Policy Package for the textiles sector was designed to support decision-making processes at the EU-level in order to encourage the adoption of circular economy business models and subsequently facilitate a more systematic and broad-scale shift to circular practices. For a more in-depth understanding of these issues, we recommend the reader access the various R2Pi project deliverables including the above mentioned textiles case study and Deliverable 7.1.5: “Circular Economy Policy Package for the Textiles Sector” available on the R2Pi website.

The policy packaging process described above should be followed, systematically so that the reader can consider the best ways to design policy that is, concurrently, effective and implementable.

While policy currently exists within the EU to constrain the potential negative environmental and social impacts of the textiles sector, further governance is necessary to constrain these externalities to a more meaningful degree. To a large extent, this is because the current policy landscape within the textiles sector pertains mainly to the management of discrete environmental effects and does not effectively address the life-cycle impacts of textiles and how these impacts are produced across the entire value chain. The recommendations in the policy report helps support the growing need for policy instruments that lower costs of material reuse and recycling, and research and development, while also increasing the demand through funding, tax incentives, and regulatory tools. These involve measures such as promoting recyclable and reusable packaging, to funding scholarships for students in the field, to lowering taxes on labour to enable manual sorting of textiles to stay in Europe.
Clearly, the feasibility and implementability of policy instruments varies across recommendations. However, each supports the transition of the textiles sector to a circular economy in a manner which existing policy currently fails to do.

The policy instruments outlined in the Textiles report provide a set of opportunities for government decision-makers to leverage some of the dynamics of the textiles sector for positive change. These instruments have been generated thorough a collaborative, multi-stakeholder process and further validated by experts both for saliency (meaningfulness), but also for their practicality to the social and political contexts (implementability). Recommendations range across the lifespan of textile products and can be utilized through a range of governance instruments.

Ultimately, the Effective Package is the distilled effort of this policy instrumentation process, such that those remaining most-optimally synergize with one another, are realistically implementable in current and forecasted political climates, and provide the maximized marginal utility to supporting a sector-wide shift to circular practices.