

Exhibit 1

# Revised roadmap

Circular economy with a focus on plastics and textiles

File number: 1153-00001A Page 1 of 7



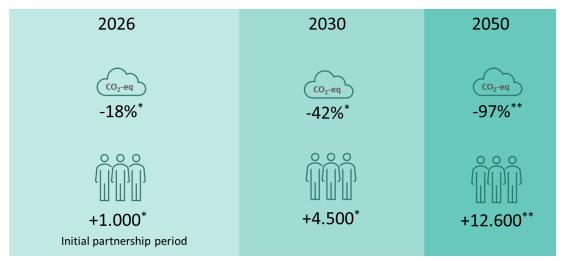
## **Exhibit 1 describes the updated roadmap**

### Final updated and prioritized Innomission-roadmap

The following text highlights the projects prioritized to be started in the first year of the Partnership and does as such serve as the first adjustment and prioritization for the Roadmap *Circular economy with a focus on plastics and textiles*.

The projects prioritized to be initiated in the first year of the partnership will contribute to the key milestones for the partnership. Figure I illustrates key milestones for the partnership towards 2030 and 2050. The key milestones are focused on the initial partnership period 2022-2026 with the expected outcome of the pool 1 projects highlighted. The roadmap points at key performance indicators to determine the success of initiatives to realize the roadmap ambitions. These are reduction of CO<sub>2</sub>-eq emissions and job creation. The 2030 and 2050 ambitions for these KPI's are carried into the partnership and are as such the partnership impact ambitions (see figure I).

The partnership ambition is to realize a reduction of emissions of approx. 500.000 tones CO<sub>2</sub>-eq, and creating more than 2.200 jobs based on the pool 1 projects. Furthermore, the partnership expects a similar impact of the pool 2 projects. Thus, in total the initiative from pool 1 and 2 in the partnership is estimated to have an impact of a CO<sub>2</sub>-eq reduction of approx. 1 million tones and job creation of more than 4.500. Part of this potential will in part be obtained within the initial partnership period 2022-2026, and part towards 2030 and 2050, as illustrated in figure I.



**Figure I:** Illustration of key milestones for the partnership towards 2030 and 2050 focused on the on the initial partnership period 2022-2026. \* denotes pool 1 and 2 impact ambitions, whereas \*\* denotes total roadmap potential.

Achieving net zero is a long-term and comprehensive agenda with multiple inflection points to be achieved. The long-term North Star vision by 2050 is clearly the **regenerative** circular society where resources are regrown from sustainable sources at zero or low impact. However, before we get there, we must first transform every element of our take-make-waste system to serve **restorative** purposes to demonstrate and establish support infrastructure for an absolute decoupling of resource consumption and growth. This includes how we manage resources, how we make and use products, and what we do with the materials after end of use. The **restorative** inflection point represents the point where absolute decoupling of resource consumption and societal growth is reached. To reach this scalable market solutions for new materials



platform, responsible and intelligent consumption, high value utilization of waste flows and extended lifecycles must be available. This is the vision for 2030, which builds on three preceding steps where the integrated system is demonstrated by achieving the threshold of supporting 40% absorption of low impact resources and thus achieving a relative decoupling of growth and resource consumption. The partnership believes that 40% is an important threshold to achieve, because this point indicates the full market adoption of the circular solutions as a competitive alternative to traditional markets solutions. In the light of expected growing demand on resources the 40% threshold represents a tipping point where the industry is capable of reusing/replacing the lion's share of resources put into the market. The threshold is further representing a point where the regulatory framework conditions are supportive of circularity, where technologies have been matured and scaled, where demand has been matured, where supply chains & logistics are in place. In other words it represents an inflection point where it has been demonstrated that the absolute decoupling can be achieved and outlines the appropriate mix of means for it. Compliance and Transparency represent important stepping stones, which build critical capabilities related to meeting the demands of future framework conditions and which enables critical insights into resource flows that enable sustainable decisions and solutions. Here, the Transparency inflection point represents the point where demonstration is achieved, and the Compliance inflection point represents the point where the baseline is established. All five key milestones – Compliance, Transparent, Integrated, Restorative, and Regenerative are depicted in Figure II below.

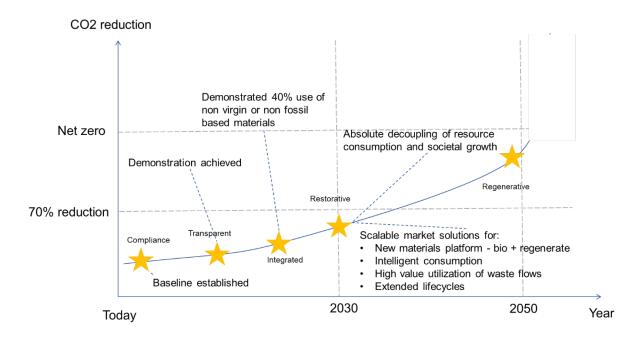


Figure II: Illustration of key inflection points for the partnership towards 2030 and 2050.

The circular economy represents a multidimensional research and development agenda, this is also reflected in the approach adopted by the partnership. Ensuring that the agenda is addressed comprehensively with a systems-based perspective, ensuring correspondence between dimensions, and addressing unintended trade-offs, and ensuring coherence in terms of approach as well as solutions. Figure III below illustrates important elements (not exhaustive) of the infrastructure that needs establishing for a successful transformation towards absolute decoupling and net zero and also introduces a staged approach where the above-mentioned maturity levels are gradually built into industrial, technical and social systems, and thus establishing conditions where elements holding back the transition to the circular economy are gradually removed.

## /nnovation Fund Denmark

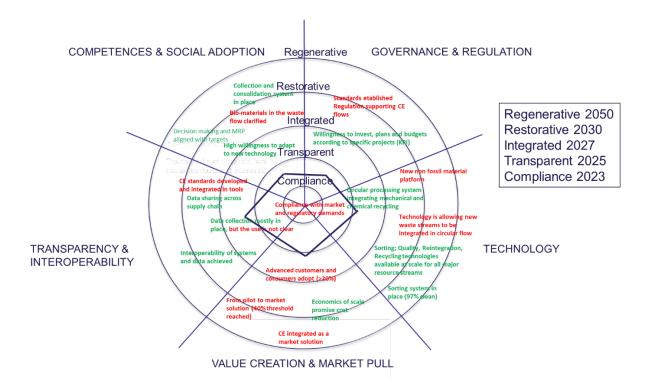
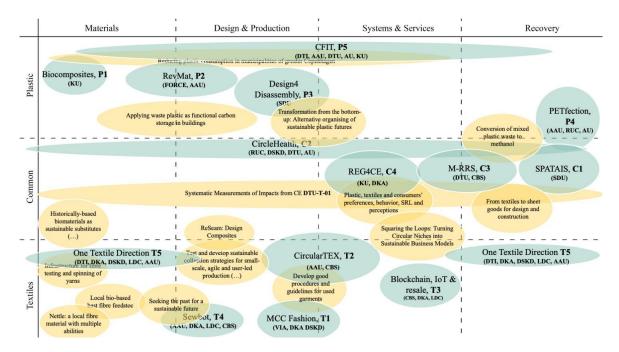


Figure III: Illustration of the comprehensive nature of the transformation needed to achieve key milestones for the partnership towards 2030 and 2050.

To accomplish the visions and scopes addressed in the above, the Partnership will initiate an array of research and innovation projects to start in 2022 (pool 1), projects selected on maturity with respect to involvement and commitment from external partners such as industrial and public entities and efficiency, incl. detailed project plans, job creation potential and GHG emissions mitigation potential. While the selected projects are covering important aspects of the Roadmap and many of these are considered important to start sooner rather than later, there are still gaps in the Roadmap and there is a significant group of research and innovation projects to be initiated later also beyond pool 2. Furthermore, the initial funding budget allocated from the IFD will not be sufficient to initiate all relevant activities highlighted in the Roadmap and hence, to realize the significant parts of the circular transition within plastics and textiles in Denmark. The projects prioritized for pool 1 and a subset of possible projects for pool 2 are illustrated in Figure IV. Pool 1 and 2 are as illustrated covering important parts of the roadmap, however the projects are not exhausting the research and innovation demanded to completely cover the roadmap.

File number: 1153-00001A





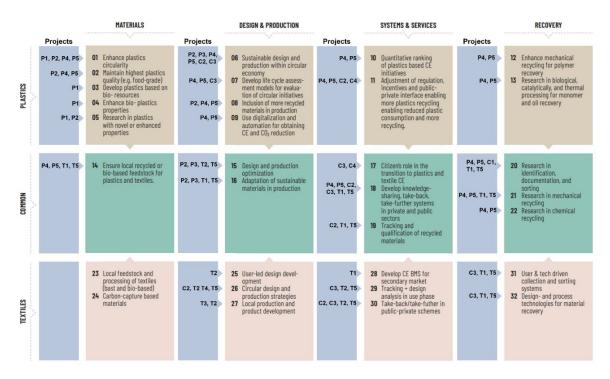
**Figure IV:** Illustration of projects prioritized for pool 1 (green) and a subset of projects for pool 2 (yellow) situated in the matrix that represent the three tracks, denoted workstreams in the main application, (Plastics, Common and Textiles) and the four central areas of the value chain: Materials, Design & Production, Systems & Services, and Recovery. The pool 1 projects are denoted P1-P5 for within plastics, T1-T5 within textiles and C1-C4 within common.

The Partnership has prioritized and submitted 14 projects for pool 1, all addressing key challenges of the circular economy of plastics and textiles (for details se Figure V below). The prioritized projects all have clear links to the Roadmap, as indicated in both figures IV and V, focusing on challenges representing all four areas of the value-chain indicated in the Roadmap. Through the prioritized projects, the initiatives in the Roadmap have been specified and now represent concrete projects in close collaboration with industry, public organizations and relevant stakeholders.

By representing all core challenge areas identified in the Roadmap, the projects supplement each other by addressing specific parts of the value-chain. Cross-links between projects are supported through Partnership wide network activities and through cross-participation of research institutions within the projects. Overall, the prioritized projects represent a concerted effort to resolve some of the core challenges related to the transition to a circular economy.

Even though pool 1 projects cannot cover the entire range of projects needed for the transition to the circular economy, these projects address the majority of Initiatives highlighted in the Roadmap (figure V). Apart from the links to the Initiatives in the Roadmap, the projects further have a potential to synergize, as described below for the three tracks (denoted workstreams in the main application).

File number: 1153-00001A



**Figure V:** Submitted projects according to Roadmap initiatives figure 3/p. 9 in the Roadmap *Circular economy with a focus on plastics and textiles.* 

### **Plastics**

Five projects are submitted for the plastic track, pool 1. The projects have a strong focus on the industrial ecosystem as this is representing a critical element of the value-chain: this is where materials are selected, products are designed, and the actual recycling occurs. As such the five projects have interdependencies and will benefit greatly from exploiting the synergies between the projects. P5 spans the entire value chain and as such has potential to synergize with all other projects within this track. P1 focuses on new biobased materials. New sourcing and planning approaches are developed for increased use of recycled materials in industry in P2, new design approaches enabling improved sorting and disassembly are developed in P3, and in P4 new recovery and processing technologies for increased reintegration and recycling of plastics are developed. The projects address prioritized core challenges associated with: availability of recycled materials, trustworthiness and quality of these materials, and manufacturability of the recovered material are addressed from an industry perspective. New closed or semi-closed material loops are established within the activities. Overall, the prioritized projects represent a concerted effort to resolve some of the core challenges in relation to plastics circularity.

### Common

Four projects are submitted for the common track, pool 1. Even though the four projects are independent of each other, there are potential synergies that the partnership will explore during execution of the projects. The C2 project spans the entire value chain and has links to the three other projects. C2 focuses on reducing plastic consumption in the healthcare sector, through all steps of the value chain. One aspect of this relates to innovation of new products as alternatives to current single use products, and C2 therefore links to C4, where focus is on regulatory barriers. C3 aims at ensuring a higher recycling rate of mattresses from, among other sources, hospitals, and other public sectors. This increased recycling/reuse of products used in the public sector link C3 and C4, and C3 is furthermore relevant in this context. C1 focuses on improving waste sorting through AI. This will greatly benefit sectors with high and diverse waste productions, such as the public healthcare sector in focus in C2. Using AI in waste sorting is still in its infancy and apart from technical barriers there might be regulatory barriers that has to be addressed. In this sense there is a potential for synergy between C1 and C4.

### **Textiles**



Five projects are submitted for the textiles track, pool 1. These show both strong independent agency and a great potential for cross-pollination and synergies. The two projects, T4 that has focus on development of automated clothing production as a means to deliver close-to-market products in small-scale volumes and T1 that has focus on development of more diverse fit and sizing schemes and collection strategies that are user-led and based on body-scans and multiple user study data both favor SMEs and small entrepreneurs dominating the Danish fashion sector and the individual brands of larger fashion companies and through enhanced production technology and collection strategies will enable the sector perform better economically by reducing shipment from production countries, and reducing returns. Furthermore, the submitted projects demonstrate how primarily industrial textiles deadstock from public procurement and the interior sector can be funneled into take-back activities such as in T2 that with pilot tests showcases close-to-market- and stakeholder-led circularity strategies for repurposing on B2B and B2C level. However, all the products already on the market are not traceable and thus the project T3 aims to analyze existing data and user behavior to inform current market players and data for building up valid LCAs, certification schemes and policy on clothing longevity. T5 will focus on establishment of a circular Danish value chain for textiles, will identify, develop, and mature technologies for transport optimization, automated sorting systems, fiberto-fiber recycling and will include design for sorting and sustainable use, reuse, and end-of-life handling of work wear and thus in many different ways relate to the other projects in the track.

On the following pages the updated individual projects; P1-P5 for plastics, T1-T5 for textiles and C1-C4 for the common part, are here described in more detail than found in the Innovation section of the main application.

Updated Project Descriptions for Pool 1 projects and the Roadmap are found in exhibit 1A and 1B, respectively.

File number: 1153-00001A