

Abstract: Business Strategies for Sustainable Production 3.0

Several concepts on sustainable production have been discussed in recent years. Well-known production concepts such as cleaner technology and recycling have been supplemented by product-oriented concepts such as cradle-to-cradle, closing resource loops, product-service systems and take-back programmes. However, little research has been carried out regarding how to integrate these concepts in the business strategies of companies and how to subsequently implement these.

This paper presents a project conducted by Aalborg University, Department of Development and Planning, Network for Sustainable Business Development Northern Denmark and Gate 21. The project is funded by the Danish Industry Foundation, and the aim is through working closely with 20 companies of different size and from different industries to assist the companies in the transition towards sustainable and circular business models. This could for instance be closing material loops through product take-back solutions or implementing product-service systems. The aim of the project is furthermore to analyse the potentials and challenges of implementing such concepts in the business strategies and practices. The objective of the project is thus to 1) increase the competitiveness of Danish companies through a solid and innovative focus on sustainable and resource effective production and product design, 2) increase the companies' triple bottom line through circular economy initiatives and new jobs, 3) establish new business areas through closing material loops, increased product lifetime, reuse and refurbishment of products, 4) support the transition from waste to resources through waste prevention and resource efficiency, 5) foster new competences among the actors through exchange of experiences and knowledge sharing in innovation networks between industry, authorities, universities etc. and 5) increase the collaboration and communication between producers, waste management facilities and other relevant actors on topics such as resource efficiency, product design, business models and systems for closing material loops. The project is a three year project from spring 2015 to spring 2018.

The transition to sustainable production 3.0 is important for the competitiveness of businesses for several reasons. First, the production costs can be kept at a competitive level, through resource efficient production methods and product design. Danish companies have already optimised the production processes, but there are significant potentials in relation to resource efficient product design. Second, many business models focus on total cost of ownership, through for instance warranty and service schemes, or take-back systems, which can help keep the raw material and component prices down. Third, the shift from products to product-service-systems is one way for creating added value for the customers, i.e. keeping the production costs low and the potential for a higher sales price and a closer customer relations. An added benefit of resource efficiency and sustainable production is that the vulnerability of the industry towards increasing raw material prices and unstable supplies is reduced.

The main target group of the project is Danish production companies and their organisations. As such, the companies taking part in the project span from small start-up companies, to large, well established corporations. A variety of industry sectors are represented, such as textile, furniture, food production, retailers, laundry services, lighting and water cooler. The companies in the project include; A Man of Value, Beck Pack, Better World Fashion, CO2Light, COOP, Environment Solutions, Gabriel, Green Solution House,

Velux, Højer Møbler, Jensen Group Denmark, Knowledge Cotton Apparel, Kuvatek, Limfjords Rodfrugter, Mogens Hansen Møbler, Philips healthcare, Refarmed, Victor Vask and Vrå Dampvaskeri.

The project is divided into four main tasks. After the companies were selected, the first step of the project was to engage the companies via screening and discussions about the potentials are for developing sustainable business strategies. In this process it is emphasised to meet the companies related to their interests and take point of departure in the companies' current activities and the challenges they are facing. All companies in the project are interested in improving their current efforts and strengthen their sustainability profile, but their point of departure is different. The second step regarding implementing the chosen development projects varies from company to company. The third and fourth step is to develop inspirational material and guidelines on how to develop and implement sustainable business strategies and to arrange several train the trainer workshops. The target groups of these workshops are business networks, trade associations, municipalities and waste management companies, and the aim is to disseminate the knowledge obtained from the project.