

Technologies to Promote Sustainable Fashion Textile in Support of Canada's 2030 Climate Change Goals

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With Canada striving to cut its Greenhouse gas emission by 50 percent and bring its waste to zero by 2030 as part of its attempts to meet the requirements of the Paris Climate Change Agreement, Canada must address all areas of GHG emissions strategically rather than dealing with the issues on ad hoc basis. The Canadian government recently published their GHG emission reduction plan on Greenhouse gas emitting sectors to assess the gravity of the problem coming out from each sector. The government's lackluster attitude was evident as it failed to recognize the grave dangers of the textile industry about the threats it poses to the environment in general and climate change in particular, therefore, not pinpointing it as a separate sector and instead of clubbing it under 'waste and others' (Environment and Climate Change Canada, 2020). The textile industry is known as the second-largest environmental polluter globally (Moorehouse & Moorehouse, 2019). From clothing manufacturing to its consumption, this sector is a significant perpetrator when it comes to causing damage to the environment (Virta & Raisanen, 2021). These hazards include waste contamination, water wastage, greenhouse gas emissions, river pollution through acidification, and the addition of microfibers from textile washing (Bick, Helsey & Ekenga, 2019). It is estimated that only the polyester production for textile use excreted 706 billion kg in 2015 alone, equivalent to the amount produced from a supply of electricity to 64 million American homes for one year (Markati & Karpova, 2020, p.78). Clothing manufacturing in Canada stood at CAD 1.77 billion in 2020 (Shahbandeh, 2021), whereas retail clothing sales represented a hefty chunk of Canada's GDP, amounting to CAD 25.89 billion in 2020 (Sabanoglu, 2021). Based on this, the textile sector must be looked upon as an additive and accelerator of climate change. This study will mainly focus on two issues. Firstly, textile waste from excessive production and consumer disposal ends up in landfills, which ultimately disintegrates into GHGs (Degenstein, McQueen & Krogman, 2021). Secondly, shed light on the textile washing problem that results in the release of millions of microfibers that are the pollutants in the Canadian rivers, which not only eat up the oxygen in the rivers but also forms Carbon Di Oxide that affects the ozone layer leading to global warming and climate change (Doucet, Labak & Kurek, 2021). This conceptual paper will review the technologies being used to curb these environmental detriments from the textile industry. Consequently, it will recommend further steps for identified stakeholders to curb the environmental impact emanating from the textile industry. The research will prove beneficial for industry stakeholders, including businesses; who can use the consumer insights to build more inclusive business strategies, Government; who can use this to understand the gravity of textile sustainability and incorporate the same in their climate change national plans and Academics; who can use this as a base for further research.

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