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FASHION INDUSTRY CHARTER FOR CLIMATE ACTION AND GLOBAL FASHION INDUSTRY

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Abstract: *Fashion Industry Charter for Climate Action is consequence of a long-term international meeting chain, called the COP-Conference of Parties. The COP is an international climate conference that unites the signatory countries (195 countries + the European Union) of the United Nations Framework Convention on Climate Change (UNFCCC) since 1995. The goal of the consecutive meeting chain is to manage the interiorization of the Convention and negotiate new commitments.*
Fashion Industry Charter for Climate Action is prepared and launched by the patronage of UN Climate Change at COP24 in Katowice, Poland, in December 2018 and renewed at COP26 in Glasgow, UK, in November 2021. The stakeholder of the charter is the global fashion stakeholders including textile, apparel and clothing industries with a holistic commitment. The charter contains the vision to achieve net zero emissions by 2050 in line with keeping global warming below 1.5°C from pre-industrial levels defined in the COP 21 of Paris Agreement in 2015.
In line with the launched charter, planned tasks of global fashion industry are focused on decarbonisation, reduction of greenhouse gas emission (GHG), renewable electricity utilisation across supply chains, implementation of tools and measures about broadening climate actions. Therefore, the paper is aimed to inform and increase the awareness about current climate actions of global fashion industry.

Key words: *Climate change, fashion, textile, apparel, COP, green house gases (GHG)*

1. INTRODUCTION

Climate change, global warming, excessive rain, unexpected meteorologic events become major issues over the world. Increase on greenhouse gas emission (GHG) is one major reason for the climate disruption, that was started right after the industrial revolution era and augmented drastically by the raising number of consumer society. The growth in the frequency and violence of natural disasters, melting icebergs, and climate refugees are expected results of the irresponsible behaviour shown by past and current industrialized generations. It has been reported that global fashion industry caused about 2.1 billion tonnes of GHG in 2018, equalling 4% of the total global emission. Raw material manufacturing and the rest of the related manufacturing phases are responsible for about 70% of the fashion industry's emissions, where the remained 30% is associated with retailing, consumer use-phase and end-of-life sessions. Beside the current influence on the total GHG emission, it has been estimated that GHG emission of the fashion industry will become around 2.7 billion tonnes a year by 2030 with an annual increase ratio of 2.7% [1]. Therefore, fashion sector has

acted, with the other industrial sectors, to protect the environment and organize action plans and about pollution problems. Aware of the damage caused to the environment and its consequent harmful effects; international organisations, goverments, climate professionals, academics [2], [3], [4], [5], [6], [7] and citizens, have decided to commit themselves to minimizing the impact of their activities concerning the future of the planet. To act, for the last few decades, several numbers of political meetings have been organized to discuss the climate issues and sign agreements and charters setting out actions to be taken in order to limit the resulting impact as soon as possible.

In this study, historical background of the Fashion Industry Charter is introduced starting with the earliest COP meeting chains, COP 21 Paris Agreement and Fashion Industry Charter for Climate Action of COP 24 and COP 26. Fashion Industry Charter for Climate Action is introduced with its consequences; reciprocity and reflection of the action terms in the global fashion industry are searched; and in line with the launched charter, planned prevention tasks of global fashion industry is listed.

2. CONFERENCE OF PARTIES - COP

Concerns about the world climate have officially started with the initiation of World Meteorological Organization (WMO) and UN Environment Programme (UNEP) the Intergovernmental Panel on Climate Change (IPCC) in November 1988. After the early establishment of IPCC, scientific assessment reports about management the risk of excessive natural occarences and disasters are analysed at international level. First official report of IPCC was released in November 1990, during the 2nd World Climate Conference Call for Global Treaty with the statement of *'emissions resulting from human activities are substantially increasing the atmospheric concentrations of greenhouse gases'*. One month later, on December 10, 1990, the UN General Assembly established the Intergovernmental Negotiating Committee (INC) for a Framework Convention on Climate Change where more than 150 states discussed binding commitments, targets and timetables for emissions reductions, financial mechanisms, technology transfer, and 'common but differentiated' responsibilities of developed and developing countries. An official text about Climate Change is prepared and adopted the United Nations Framework Convention in May 1992; and it is opened for signature at the Earth Summit in Rio on June 1992, bringing the world together to curb greenhouse gas emissions and adapt to climate change.

The United Nations Framework Convention on Climate Change (UNFCCC) entered into force on March 21, 1994, and countries that sign the treaty are known as 'Parties'. Participating 196 Parties meet annually at the Conference of the Parties (COP) to negotiate multilateral responses to climate change. First Conference of the Parties (COP 1) was organized in Berlin in April 1995, where Parties agreed that commitments in the Convention were 'inadequate' for meeting Convention objectives. The Berlin Mandate established a process to negotiate strengthened commitments for developed countries, thus laying the groundwork for the Kyoto Protocol. COP 21, on December 12, 2015, held in Paris with 195 nations, known as Historical Paris Agreement, was accomplished with the aggreement to combat climate change and unleash actions and investment towards a low-carbon, resilient and sustainable future [8].

The Paris Agreement marked a turning point in the fight against global warming, as it commits all the countries of the world to '*reducing their greenhouse gas emissions and keeping warming below the 2°C mark by 2100'* and efforts continue to *limit the warming below the 1.5°C*, according to Article 2.1. of the Paris Agreement [9].

After the Paris Agreement of COP21, succeeding venue and virtual COP meetings are conducted on different locations through a roughly defined road map to fight global warming. The

Fashion Industry Charter [10] was launched at COP24 in Katowice, Poland, in December 2018 and renewed at COP26 in Glasgow, UK, in November 2021. On COP 27 the decisions taken in Sharm El-Sheikh require all countries to make an extra effort to address the climate crisis [11].

3.FASHION INDUSTRY CHARTER FOR CLIMATE ACTION

Launched and improved fashion industry charter of 2018 and 2021 define the specific tasks, which are grounded on Paris agreement, under eight working groups of "Decarbonization pathway and GHG emission reductions", "Raw material", "Manufacturing/Energy", "Logistics", "Policy engagement", "Leveraging existing tools and initiatives", "Promoting broader climate action", "Brand/Retailer Owned or Operated Emissions".

Consequence of the charter, companies are expected to reorganise their business models. Officially stated expectations are focused on:

-Support the goals of the Paris Agreement in limiting global temperature rise,
-Reduction of GHG around 30% by 2030 against a baseline of no earlier than 2015,
-Analyze and set a decarbonization pathway for the fashion industry,
-Quantify, track and publicly reporting the GHG emissions,
-Partner with experts to develop and implement a decarbonization strategy,
-Selection of materials with low-climate impact (priority),
-Energy efficiency measures and renewable energy in the value chain,
-Not to install new coal-fired boiler or power generation,
-Preference to low-carbon logistics,
-Action improvement towards circular business models,
-Close dialogue with consumers to increase awareness about the GHG emissions,
-Partnership with finance community to built up a low-carbon economy,
-Develop a strategy advocating the development of policies and laws about climate action,
-Establish a dialogue with governments in key countries to enable systemic change,

4. REFLECTION OF THE CHARTER ON FASHION SECTOR, CONSUMERS AND MANUFACTURERS

Implementation of the charter on global textile, apparel and fashion sector resulted with some positive improvements alongside the stake holders. Raw material manufacturers, yarn, fabric manufacturer companies, textile chemical additive brands, apparel designers, home laundry equipment manufacturers, home washing brands, wastewater treatment initiations, textile recycling companies, academics, governmental and non-govermental organisation started to take interest on the commitments of the charter. Manufacturer, retailer, and designer companies all over the world are become partner or member of local or global organisations to train, learn, improve and implement charter requirements on their business model [12], [13].

Consumers are expected to learn more about environmental effects of fashion, and change their fashion approaches, shopping habits, and washing practices supporting the commitments of the charter. Consumer behaviours are expected to change according to the below listed practices [14].

-Preferring organic or recycled fabric: Utilisation of organic cotton, recycled cotton, or polyester helps reduction on impact level up to 99%. Regenerated cellulosic fiber utilisation is also reported as preferred fiber.

-Repairing the clothes: As result of fast fashion, shopping habits are changed to the direction of buying, charter rules the consumer to make repairing instead of buying new textile items.

-Second hand shopping habits: Second hand shops or second-hand internet pages promote recycling, reuse, and upcycling in textile.

-Change fiber preference to the organic flax and hemp: Clean fabric, clean fiber terms should become part of regular shopping habits where less water, less chemical consumption is practised.

-Buying from the local manufacturers: Clothing and textile shopping selection should be made considering the environmental, logistical, and social costs of the manufactured country.

-Prefer to buy transparent brands: Brand selection should be made considering the transparency policy of the brands, where reliable sustainability reports are published

-Wash the textile and apparel items properly: Home laundering should be made at moderate temperatures of 30 to 40°C, that is enough heat to remove the dirt. Plan the washing cycle of clothes properly. Prefer to use less harmful washing agents, detergents, or soap.

Textile manufacturers are also expected to implement new habits and practices during their production phases in the content of raw material selection, energy, and waste management. Textile manufacturers behaviours are expected to change according to the below listed practices:

Raw material

-Utilization of man-made fiber group that has reduced environmental impacts

-Utilization of plant-based fibres that require less amount of water, synthetic fertilizer, pesticides, and herbicides compared to those of cotton growing.

-Extension of natural coloured cotton agriculture practices over current cotton growers in the world.

Energy

-Implementation of renewable energy sources such as solar, hydropower, landfill gas (LFG), or geothermal energy.

-Generation of the electricity, hot water, and steam needs of textile factories with combined energy systems (cogeneration), where electricity and heat are produced simultaneously.

-Use of energy-efficient engines and drive systems in the machinery and equipment.

-Ensuring to operate heating, ventilation, humidification, and air conditioning systems in optimum conditions.

-Adaptation of automated systems to increase efficiency in energy management.

-Reduction of unnecessary electric consumption to benefit from natural lighting in sustainable textile manufacturing facilities.

-Achievement of predictive maintenance plans in textile manufacturing operations.

Waste management

-Widespread use of heat recovery applications from wastewater pipes and exhaust gas in textile dyehouses.

-Reuse of rinse water and less polluted water with a mixture of fresh water in textile wet processing.

-Use of less harmful, bio-based, and biodegradable sizing agents alternatives.

-Reuse of wastewater including textile wet process additives such as sizing agents, mercerization agents, and dye pigments.

-Upcycling of fabric waste generated in ready-made garment manufacturing stages.

-Collection and mechanical/chemical recycling of post-consumer textile wastes.

5. CONSLUSION

Textile items are one common consumable product all over the world. Annual textile fiber production has reached 110 million tonnes which is about 13 kg of annual fiber consumption per person in the world. Rising textile consumption brings additional undesired issues beside the desired prosperity to humanbeing. Each kg of fiber consumption causes varying types and varying amount of environmental harm of GHG emission and global warming. It is reported that share of fashion, textile, and apparel industries has reached to the 4 % of total GHG emission in the world.

To control the GHG emission of the industries there are preventing measures and actions of personal, local, governmental, and international levels. Disincentive steps are raised both from top to bottom or vice versa. Internatianol actions to increase awareness and set regulations continue during the last 45 years with the meeting chain of COP.

Beside international meetings, organisations, and rules; governmental, local and individual awareness is also increasing to manage the GHG emission of fashion industries. Decarbonised material production, improved material mix, decarbonized material mix, minimized production wastage, decarbonized garment manufacturing, minimized manufacturing waste, increased utilisation of sustainable transport, minimized packaging, decarbonized retail operation, minimized returns, minimized stock wastage, increased use of rental model, increased rate of recommerce model, introduction of refurbished – upcycled product, repair service implementation, reduced, washing-ironing-drying, and increased recycling collections are a series of precaution to control the share of fashion industry's GHG.

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