Chapter 10
Government's Role in Setting Optimal Policies for Green Supply Chain

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ABSTRACT

In the last two decades lot of research was done in the area of Green design and Green supply chain management. But very few researchers have really tried to study the government's role in the implementation of Green designs and Green supply chain in any nation. In this paper simple general equilibrium model is used to analyze the benefits from taxes, and subsidies by government for green disposal efforts such as waste reduction, waste recycle, remanufacturing, and disposal on both the manufacturers and household consumers.

INTRODUCTION

In every year since 1993 has been in the top 20 warmest years on record[1]. Environmental degradation and increasing resource depletion has compelled the governments across the globe to set policies on green practices such as Green design, Green procurement, Green manufacturing, Green packaging, Green distribution and Green disposal for all the manufacturing companies. Furthermore, with a global concern to environmental issues, various countries have framed stringent laws on disposal of goods, and are imposing green barriers while importing commodities from the global markets.

Fullerton and Wu (1998) in the paper "Policies for green design" initiated the discussion on how the government can use different mix of policy instruments to deal with various organizational and market failures in managing household waste. They suggested in the absence of a market for recycled goods, the mix of consumption tax, packaging tax and recyclability subsidy on producers of different industrial and household products can lead to minimizing the amount of waste generated and maximization of reuse and recycling of material. Similarly, if household and industrial waste is collected free of charge, then the combined effect of consumption tax, packaging tax and recyclability subsidy on producers may lead to

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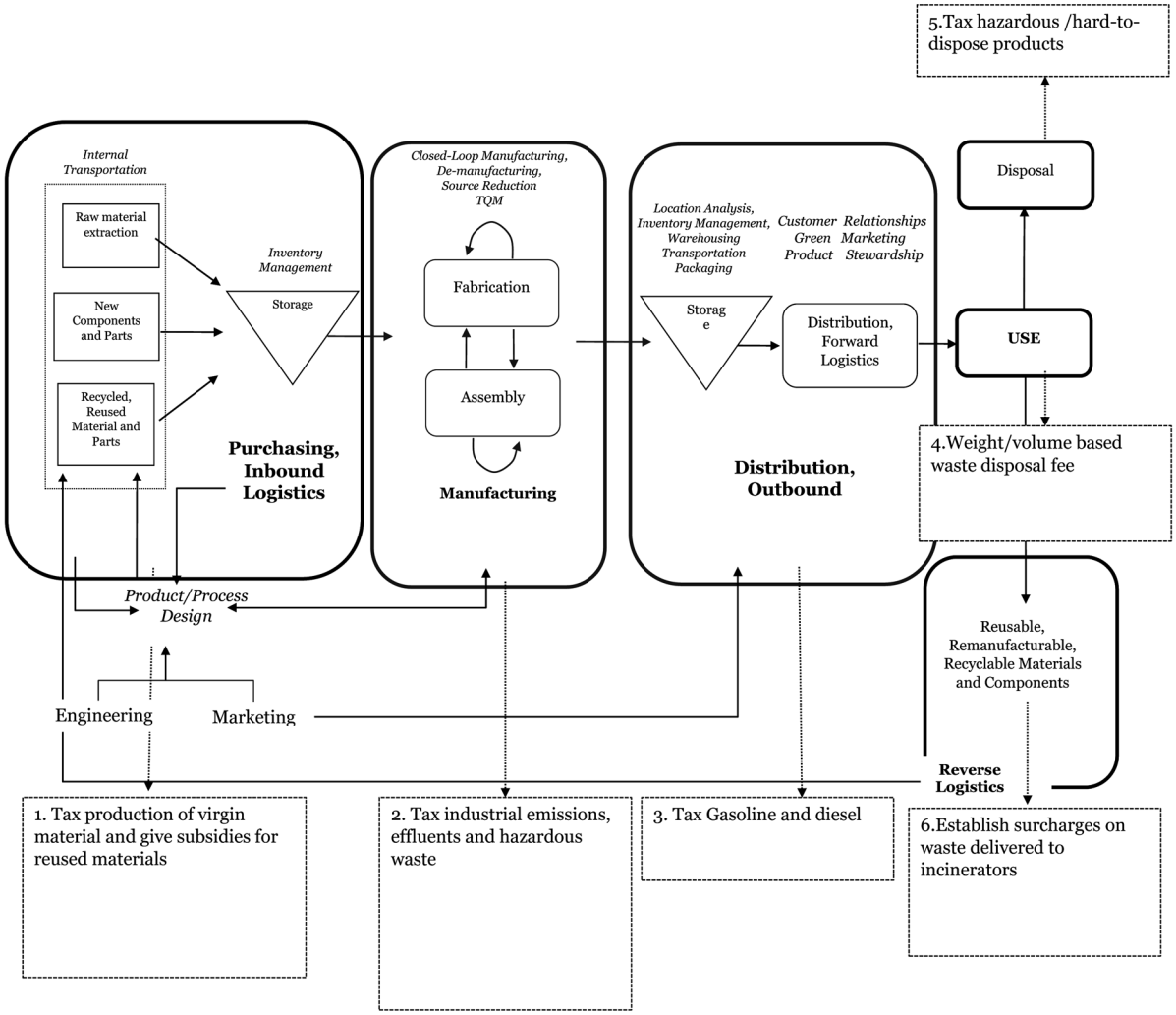
Figure 1. Government policies for manufacturers and consumers at different stages of supply chain



optimize the amount of waste in the entire product-life-cycle starting from design, to production, packaging, sales, use and disposal. Figure-1 shows how the government policies can target different stages in the product life cycle. Policies that affect product design will also affect product disposal and vice versa.

BACKGROUND

The concept of Green Supply chain Management was first put forward in US Michigan State University in 1996 (Zhou, 2009). Since then the scholarly interest in the area of Green Supply chain Management has rapidly developed across the world. Benita M. Beamon, (1999), in her Paper "Designing the green supply chain, Logistics Information Management", gave a new aspect to the Supply chain management