

# Chapter 1

## Green Production and Green Supply Chain Governance Under Extended Producer Responsibility

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### **ABSTRACT**

*Extended Producer Responsibility (EPR) is a strategy designed to promote the integration of environmental costs associated with goods throughout their life cycles into the market price of the products. In order to explore the decision mechanism green production and the governance mechanism of green supply chain under EPR, this chapter makes a theoretical overview about the main issues of EPR and supply chain governance firstly. Generally, under EPR, the government uses financial incentives to encourage manufacturers to design environmentally friendly products by holding producers responsible for the costs of managing their products at end of life. Therefore, the green production framework under EPR is put up from the product life cycle perspective. Next, a supply chain governance framework is proposed to launch green supply chain when EPR policy is enforced. Finally, future directions of green production and green supply chain governance are developed.*

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## **INTRODUCTION**

The United Nations points out that the green economy is an economic model aimed to improve human well-being and enable the broad masses of the people to fully enjoy the fruits of economic development while significantly reducing the adverse effects of human activities on the environment. Environmental economists believe that economic development must be affordable to the natural environment and the human self; it should neither lead to social division and ecological crisis because of blind pursuit nor can it stop the continual development of the economy because of the depletion of natural resources. The essence of green economy is sustainable economic development coordinated with ecological development. Green economy is a balanced economy based on the environment that promotes human survival and health and that reasonably protects resources and energy. In this economic model, environmental technologies, green production processes, and other environment-friendly technologies are transformed into productive forces, achieving sustainable economic growth and ultimately eliminating poverty. In the previous economic development model characterized by “the first pollution, post-governance,” the national economic level and people’s consumption level rapidly increased, but environmental problems became prominent. The pressure from asset scarcity gradually increased. In particular, the increase of waste products resulted in serious environment pollution.

All countries in the world consider waste disposal as a major problem that affects their sustainable development. Various policies and regulations have been enacted to solve this problem. Extended producer responsibility (EPR) is a waste-management system and principles that arise from the increasingly serious waste problem. The concept of EPR first proposed by the Swedish Lund University environmental economist Thomas Lindhquist in 1988 quickly became a global issue in management, environmental science, sociology, law, and other disciplines. As a harmonious concept of social development in the context of increasingly serious pollution and resource scarcity, EPR is applied to promote the basic principles of environmental policy in different countries and regions. In 1991, the German “Packaging Act” first extended the EPR system in the law, and many developed countries and regions established EPR-based waste recycling systems through legislation.

Examples include the European Union’s Waste Battery Management Directive 91/157/EEC, Packaging and Packaging Waste Directive 94/62/EC, Waste Vehicle Management Directive 2000/53/EC, Waste Electrical and Electronic Equipment Directive (WEEE), Restriction of the Use of Hazardous Substances in Electrical and Electronic Equipment, Integrated Product Policy, and e-waste disposal. The Chinese government formulated a series of EPR policies to regulate the waste from electrical and electronic products, such as the Regulations on the Management of Recycling of Waste Electrical and Electronic Products, Measures for the Administration of Collection and Use of Waste Electrical and Electronic Products Processing Funds, and Implementation Plan for Producer Extension System. After nearly 30 years of academic research and policy practice, the scope of EPR expanded, and developing countries (such as India and Malaysia) also planned to introduce EPR in the field of product waste. Concrete measures to implement EPR are diversifying.

Issues on the amount of generated waste, resource depletion, and environmental pollution have become prominent issues affecting the national economy and sustainable social development. In this context, in-depth studies on green production and green supply chain management theory and practices that explore green production and green supply chain development strategies based on EPR under the guidance of enterprise green practice are necessary.

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