

# Green Supply Chain Management and Countermeasures Implementation of Household Appliances Company

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**Abstract:** The environmental load of household electrical appliance enterprises increasingly large this year. The inevitable choice for electrical and electronic companies is to build a green supply chain. This article describes the main contents of household electrical appliance enterprises to build a green supply chain management including green design, green procurement, green production, green packaging and transportation green recycling. And from the macro-and micro-business point viewed the government to explain the green supply chain management policies regulations standards and implementation measures.

**Keywords:** home Appliances; business green supply chain; green design and manufacturing; green recycling; policies and standards

## I. General Information

With the theory and practice of supply chain development, the green supply chain which has a high demand and environmental symbiosis came into being. Early in the 20th century 70's the idea of green supply chain began to sprout. Put forward in the supply chain to consider environmental factors. Green supply chain management refers to the sustainable development theory and the basic principles of supply chain management as a guide. The entire green supply chain between the various actors involved in the logistics information flow capital flow and knowledge flow planning organizing leadership coordination and control, etc. The aim is to make the whole supply chain to minimize the negative impact of the environment and the most efficient use of resources. Green supply chain into a new design idea. For the products from raw material purchase production consumption waste recycling and reuse until the entire supply chain eco-design thereby reducing the cost of the enterprise environment improve economic efficiency and environmental benefits. Although the theoretical study of green supply chain is still in its infancy but the ultimate aim is to promote the coordinated development of economy and environment. And at the micro level can enhance the core competitiveness of enterprises. Therefore it has become the inevitable choice under the new situation of modern enterprise management mode. Many companies began the practice of green supply chain management activities. Electrical and electronic industry have a energy demand and consumption of enormous about various raw materials

resources. So how the financial crisis and energy shortage environment making household electrical appliance enterprises both to meet a variety of regulatory requirements and can effectively control costs, but also gain more experience in which to create a better product procurement production sales and recovery mode? Construction of green supply chain for the implementation of environmental policies and regulations are inevitable choice. The following more specific about how the household electrical appliance enterprises to build green supply chain system and discuss how to implement management in various sectors; the implementation process what they need policies and measures.

## II. The basic contents of household electrical appliance enterprises green supply chain management

### Green design

Green design is the essence of product manufacturing it takes into account the entire life-cycle phases of environmental management. Related to raw materials selection product manufacturing transportation and packaging product sales and maintenance product use product recycling and reuse and other links, just as Haier refrigerators, in the design of environmentally-friendly require to achieve the recyclables of materials energy-saving half and the thickness by half; And DELL computer's removable design. Therefore, enterprises in the design of products are sure to follow the following principles and strive to achieve the indicators:

- Raw materials: to minimize the types and quantities of raw materials, Harmless and non-toxic, choose the recyclable materials from renewable resources, encourage substitution of renewable materials technology research;
- Components: reduction in quantity, to achieve standardization and universal, to make use of recycled materials;
- Product structure: rationalization, small size, detachable, modular design;
- Process Equipment: Batch processing, automation, high efficiency, energy and materials;
- Consumption: energy consumption, clean production, clean energy;
- Energy DPM:λ non-toxic harmless, reduction, as much

as possible the use of recycled materials and renewable resources.

### Green Purchasing and Supply

As the basis of green supply chain management, green procurement and supply requirements during production to ensure that all raw materials product quality cost etc are the best and providers can do real-time supply. We must first do a good job day to day procurement inquiry orders order tracking followed by dealing with suppliers queries online technical services business and finally to improve efficiency quality assurance, we must also focus on environmental benefits. To control the procurement of raw materials formula is reasonable whether it contains any prohibited chemicals or toxic substances, whether the small size can be disassembled or recycling. This requires not only selection of materials more important is to choose green suppliers. The following is the green supplier evaluation system.

Green Supplier Evaluation

Evaluation	Detailed Description of indicators
sustainable development index	Environmental conditions, environmental governance practices, environmental management, environmental profit and loss
Green Index	Green design, green materials, green logistics
Business Process Index	Flexible production, sound technology, product marketing rate
Cost index	Human resource costs, logistics costs, research and development costs of inputs
Information infrastructure index	The rate of information sharing, information network coverage, quality of information

### Green Manufacturing

Products manufacturing enterprises should be the implementation of cleaner production considering the requirements of ISO14000, to achieve low energy consumption, use shorter working hours, low consumption production process is simple a high rate of qualified products in the electrical and electronic products. In the manufacturing process to pay attention to the following stages:

- metal forming stage: to make use of energy-saving, well-functioning, efficient equipment, use of modern technology for structural connections, and to ensure that the process of forming a pass rate
- Non-metallic forming stage: focus on the typical injection molding process, phosphorus technology improvements or use of alternative technologies, optimizing the spray technology;
- Welding stage: using new welding

In recent years, changes in trade, increasing environmental regulations, and other sectors of production have become increasingly stringent environmental requirements. Concentration of certain substances such as product shall not exceed a few percent, and the enterprises and the precision grasp such information, do a good job of green production and green design, or whether the enterprise into an export-oriented enterprises will face difficulties.

### Green Marketing

Green Marketing is a support of green supply chain management. It is a new marketing idea to educate consumers on green consumption concepts, showing green culture of corporate and potential consumers in enhancing the visibility of enterprise products satisfaction and loyalty in the minds of consumers to establish corporate green image. In recent years an increasing number of enterprises in marketing from the use of green marketing techniques that carries out marketing activities.

In Beijing, Shanghai and some other cities dozens of green stores have set up and bear varying degrees of green products wholesale, retail, storage, transport or other functions, and some production of green products is also responsible for material supply technical and training services, etc. In addition the Galanz Group's implementation of the "trade-in" activities that any brand of used household appliances can be folded under the circumstances for cash for the purchase of some products Galanz benefits. They take practical action to allow more people to foster environmental awareness create an image of a socially responsible corporate citizen.

Many products on the market green advertising printed on some of the plethora of terminologies known as "green products", "green products", "natural" and so on. These ads use of the term to some extent in the short term let many consumers got into it they neither give protection of the environment to bring real benefits nor give the correct information to consumers of these commodities the right choice. Therefore it should be to eliminate these false advertising and marketing.

### Green Packaging and green transport

Green packaging is a continuation of green production. Refers to recycling or degradation of corruption and in products throughout the life cycle of the ecological environment and human health harmless, can promote the sustainable development of packaging. Which includes two points: choose packaging materials of the green and carry out the structural design of the green. Such as ban hazardous substances in packaging materials or the use of biodegradable plastic or corrugated pallet quality .

Green transport with the dramatic increase in the amount of logistics to bring a substantial increase in traffic volume

atmospheric environment so seriously polluted. Green transport major evaluations of centralized distribution and consumption of resources and a reasonable transport path planning. To reduce transportation and distribution costs. Centralized distribution means be considered within a wider range of logistics rationalization to reduce transport times. Resource consumption refers to controlling the process of the carriage of goods transport energy consumption. Rational planning transportation path is the shortest path to complete the transport process, such as IBM are often concerned about how to optimize the supply network, choose the right distribution centers and channels optimize warehouse site selection design and other modes of transport policy. Use of green cars choose a different vehicle, choose the different transport modes to optimize transport routes and loading mode ,etc. Based on their experience optimized transportation routes can be reduced an average of 10% - 15% of the mileage, according to U.S Environmental Protection Agency statistics 2.7 kg of carbon dioxide per liter of diesel emissions. Use the optimized transportation routes can reduce 1.5 million tons per year of carbon dioxide but also not to save fuel costs.

### **Green Recycling**

A perfect green supply chain management should include the green recycling activities which belongs to the end of product life cycle. Recycling of waste home appliances is a very important part not only because of waste household appliances and their components and parts containing a variety of resources, but also contain substances harmful to the environment and the human body. Recycling of waste home appliances not only to rely on technology but also rely on a reasonable and powerful waste recycling system and network appliances. Technologies including machine dismantling parts processing and comprehensive utilization and disposal. Green Recycled content to be considered are:

- Link up with green technology and green manufacturing standards and technical requirements, Effort to make the Reuse, Recycle, Recover
- Clear the basic process of recycling, such as recycling, registration, storage and transportation, dismantling, processing, disposal, etc;
- Determine a reasonable technical solution, choose the right pressure on the environment of small, low cost, technical feasibility, a good method;

### **III. Green Supply Chain Management Policies and Measures**

To build up green supply chain systems and appliances of all aspects of its implementation and management. It's a long arduous process which requires not only all aspects of state and government support also requires the enterprise's own efforts to green awareness throughout every aspect of business. The following talk about the establishment and

support necessary to green supply chain system of macro and micro policies laws standards safeguards and so on.

Macro-areas: environmental regulations and standards are green supply chain management decision-making to external factors especially in the initial stage, mandatory regulations are enterprises to implement green supply chain management a driving force and should therefore be to:

#### **Technology policy-making and improved.**

The Government should start with long-term development interests relying on sustainable development clear appliance manufacturing and product characteristics control the entire life cycle of household appliances to develop in line with the environment-friendly appliances and technology policy. At present China household electrical appliances in the technical process of national policy: "Electronic Information Products Pollution Control Management Measures"(2006) recycling has: "discarded household appliances and electronic products for pollution prevention and technology policy" etc. Many household electrical appliance enterprises such as Haier Group XinFei Group and other companies are actively carrying out and implementation. However, household appliances and electronic products for the whole process of environmental management their specific policies need to be further fine-set or based on the original sound.

#### **The implementation of relevant laws, regulations and standards.**

Policies and measures cannot do without the law and standard system Law and Policy in china now have "*The People's Republic of China Cleaner Production Promotion Law*" , "*Circular Economy Promotion Law*" standards for "*electronic information products toxic and hazardous substances in limited requirements*" (SJ/T11363-2006) "Electronic Information Products Pollution identification requirements" (SJ/T11365-2006) and other electronic industry standards. Standardization is a gradual manner. But there are still some companies recognize not in place have no product pollution management control measures. Market supervision is not enough. In the future should continue to promote legislation to establish a special "electrical and electronic products Pollution Control Ordinance", and the national standards for the core electrical and electronic products for pollution control standards and strengthen market surveillance forces.

Micro enterprises: enterprises are the main body of production. The concept of corporate culture and production management and planning is a green supply chain management decision-making to internal factors should be to:

#### **Establish a firm sense of environmental protection.**

The formation of full participation of Green corporate culture then. To actively improve the entire supply chain environmental standards and the whole industry. In the

implementation of green supply chain management, the firm's senior leaders should be allowed to each of middle management and junior staff recognized that green supply chain management for social and business arising from the long-term returns; so that every employee through practice efforts to "green "slowly becomes a part of corporate culture.

### **To implement green management the establishment of Green Partner**

In the supply chain parties should work closely together including designers manufacturers suppliers and materials experts that is between the full multi-party communication information sharing collaboration based on the joint green design, green manufacturing and eventually the whole process. Green Management and co-implementation of the green marketing lead the trend of green consumption and establish a good corporate reputation. In addition the implementation of green supply chain management should actively with suppliers and distributors to establish a new strategic alliance partnership. Green supply chain of strategic cooperative partnership is not only a relationship between information and the sharing of benefits, but also a standard and awareness of the relationship between synchronization protocol. Green co-operation not only vertically in the supply chain environmental impact on the co-management but also in the horizontal can be a joint enterprise of the same functions.

### **Build a green network**

Every enterprise attach importance to the selection of product materials, but the choice of green materials is a highly integrated complex issues. Therefore, we should make full use of network technology research and establish an appropriate and effective green supply chain management database knowledge base and information system including material selection product and process design packaging and so on, evaluation index system and so on, Which can basically cover the industry products in the international environmental standards, the industry's raw materials and products and a variety of people and environment-related data as well as parts of different materials, the recovery approach to help managers make the right qualitative and quantitative analysis of the decision-making.

In summary to establish a good home appliances green supply chain system to require each enterprise in the supply chain must achieve "energy conservation abatement and reducing consumption," to ensure that household electrical appliance enterprises green design, green manufacturing green marketing, green storage and recycling. This requires not only the enterprise's own efforts to run through the green conscious part in every business, but also the need to develop all aspects of state and government environmental policies laws and standards as a backing and the need to ensure that the popularization of new technologies as well as the implementation of the measures and so on.

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