

On the Development Countermeasures of Children's Toy Industry under the Background of Energy Conservation and Emission Reduction

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Abstract

Firstly, this paper uses two commonly used research methods: investigation and research method and literature analysis method to deeply explore the relationship between children's plastic toys, energy conservation and emission reduction. Secondly, combined with China's basic national conditions and the actual situation of the implementation of the plastic limit order, this paper analyzes the current situation of China's energy conservation and emission reduction development and the problems that need to be solved urgently. Finally, it puts forward new ideas and ways on how to solve the development of children's plastic toy industry, which is not paid attention to by the plastic restriction order.

Keywords

Energy Conservation and Emission Reduction; Children's Toy Industry; White Pollution.

1. Introduction

Plastic bags have brought great convenience to our life in the past century. Plastic bags can be seen everywhere in shopping malls, supermarkets and farmers' markets. However, due to the frequent and excessive use of plastic bags, it has brought serious environmental pollution and waste of resources. Waste plastic bags remain in the soil, which will affect the normal growth of crops. If it remains in the water body, it will pollute the water body and may be eaten by animals, resulting in risk. Incineration will pollute the atmosphere, direct burial can not degrade, and also pollute groundwater. These will lead to plastic bags becoming a source of "white pollution" [1]. In addition, in the current situation of extremely tight global resources, excessive use and failure to properly handle plastic bags will undoubtedly lead to a huge waste of resources, resulting in consequences that human beings cannot afford [2]. Based on the above situation, China's State Council promulgated *the notice of the general office of the state council on restricting the production and sale of plastic shopping bags* on December 31, 2007, aiming to curb white pollution, implement the scientific outlook on development and effectively protect the ecological environment. In 2020, the Chinese government promulgated *the opinions on further strengthening the control of plastic pollution*.

According to the opinions, we should promote three main tasks in accordance with the idea of "banning and limiting one batch, replacing and circulating one batch and standardizing one batch". First, it is prohibited to produce and sell ultra-thin plastic shopping bags and ultra-thin polyethylene agricultural film. It is prohibited to manufacture plastic products with medical waste as raw materials. The import of waste plastics is completely prohibited. It is forbidden to

produce and sell disposable foamed plastic tableware, disposable plastic cotton swabs and daily chemical products containing plastic beads step by step. Prohibit or restrict the use of non degradable plastic bags, disposable plastic products, express plastic packaging, etc. step by step and in different fields. Second, develop and promote green and environmentally friendly plastic products and alternative products, and explore and cultivate new business forms and new models conducive to standardized recycling and recycling and reducing plastic pollution. Third, strengthen the classified recycling and transportation of plastic waste, standardize the resource utilization and harmless disposal of plastic waste, and carry out special cleaning of plastic waste. However, from the specific content of the new "plastic restriction order", the state still attaches great importance to disposable plastic bags, such as supermarket shopping bags. People do not pay much attention to plastic toys. Nevertheless, toys are one of China's bulk exports, and China is also a major producer of the global toy industry. At present, China's toy output accounts for about 70% of the total global output. Due to the high content of some harmful chemicals in the production and processing of toys, the hidden hazards that may or have been brought by toys should be paid attention to. Plastic toys may not only harm the environment, but also affect children's physical and mental health. In this context, our group made a questionnaire and wrote this survey report to the neighborhood people, hoping to arouse everyone's attention and thinking on plastic toys.

Since the Chinese government issued *the notice of the general office of the state council on restricting the production and sale of plastic shopping bags*, namely the "plastic restriction order", on December 31, 2007, China has carried out a series of improvement measures for plastic products to reduce "white pollution". For example, it is prohibited to produce, sell and use ultra-thin plastic shopping bags; Implement the paid use system of plastic shopping bags. Strengthen the supervision and inspection of plastic shopping bags with limited production, sales and use. Improve the recycling level of waste plastics, etc. These measures mainly "limit plastic objects" are widely used plastic bags, but so far, the effect of these measures to improve "white pollution" is extremely small. Ultra thin plastic bags are still widely used in breakfast stores, fruit stores and other stores, while large supermarkets can even earn tens of millions by selling plastic bags only a year. Plastic straw is also a popular "plastic restriction object". Paper straw and bamboo straw have little substitution effect, and the cost of degradable materials is not as low as that of non degradable plastics, which has caused some obstacles to the implementation of the "plastic restriction order", while the relatively unpopular children's plastic toys have not attracted attention, but the destructive power of the quality and quantity of idle toys cannot be underestimated.

Children's plastic toys are not as good as plastic bags as consumer goods for specific groups, and plastic straws attract people's attention. However, it not only destroys the environment as "white pollution", but also brightly colored children's plastic toys contain some radioactive substances and even formaldehyde, which seriously endangers children's health [3]. In order to study the existing hazards and future development path of children's plastic toys under China's "plastic restriction order", arouse the attention and attention of the broad masses of the people to children's plastic toys, enhance people's all-round awareness of "energy conservation and emission reduction" and improve people's awareness of environmental protection, this paper puts forward corresponding suggestions and measures to improve the current situation of the proliferation of children's plastic toys as much as possible, Contribute to the cause of "energy conservation and emission reduction".

2. Analysis on the Current Situation of Children's Toys

2.1. Hazards of Plastic Toys for Children

Plastic toys, that is, toys made of plastic as the main raw material. According to the plastic molding process, it is divided into injection molding toys, blow molding toys, roll molding toys, plastic lined toys, inflatable toys, etc. Plastic is a high molecular compound made of monomer through addition polymerization or polycondensation. Its deformation resistance is medium, between fiber and rubber. It is composed of synthetic resin and fillers, plasticizers, stabilizers, lubricants, pigments and other additives. Plastic can not only after being buried underground for hundreds of years, but its heat resistance is poor and easy to age. Due to the non natural degradability of plastic, it has become the first enemy of mankind and has led to the tragedy of the death of many animals.

According to the literature survey, the chemicals contained in plastic toys include plasticizers, polycyclic aromatic hydrocarbons and organic chemicals. So far, more than 200 kinds of polycyclic aromatic hydrocarbons have been found, and a considerable part of them are toxic and carcinogenic. Studies have shown that PAHs can be absorbed by skin, respiratory tract and digestive tract, and can induce skin cancer, lung cancer, rectal cancer, bladder cancer and other carcinogenic effects. And the real danger of PAHs lies in their phototoxicity, that is, UV irradiation has a significant effect on the release of PAHs. In addition, toys are easy to be polluted in transportation, stacking and use. After testing, the average number of microorganisms detected in plastic toys is 1860 / cm², and that in wooden toys is 3955 / cm². If you do not pay attention to toy disinfection, children may be infected with hepatitis virus, dysentery bacilli, etc. when playing with toys. Even if it has been sterilized, all kinds of toys are tested after 24 hours of use. It is found that the number of bacteria in toys made of resin is zero, 59 in wooden toys, 35 in plastic toys and 2400 in fur toys.

For children, especially young children, they are full of curiosity about the world. When they play with plastic toys, they will put the plastic toys directly into their mouths due to unwise reasons. Once the plastic toy manufacturer has some subtle decorations, these subtle decorations will easily enter the child's intestines, causing the child to get sick, etc. Most of the plastics used in plastic toys contain some harmful components. Although they are called "safety plastics", they actually contain many toxic components, and many of their harmful substances exceed the standard. They are also easy to bring certain pollution to the environment. If children are exposed to these plastic toys for a long time and still smell or eat them, it will do great harm to children's health. Various undesirable components in plastic toys exceed the standard, and plasticizer is also added in the process of making them. These components will quickly volatilize after sleeping, and then enter the child's body or mouth, resulting in various problems in the child's body [4].

This kind of toy is very harmful to the environment. At the same time, it is also harmful to the bodies of businessmen, factory owners and workers who make toys, especially toys made of low-quality plastics, which may contain phthalates, which can be used as plasticizers for plastic toys. Phthalate plasticizers are mainly used in PVC materials, which can change PVC materials from hard plastic to elastic soft plastic. They play the role of plasticizer. They are widely used in medical blood bags, rubber hoses, toys, food contact materials and other products. Phthalate esters can enter the body through skin contact, respiration and diet and cause harm to human health. They are carcinogenic, reproductive toxic and mutagenic. It is found that long-term exposure to phthalates can cause genital malformations.

2.2. Attitude and Psychological Analysis of Plastic Toys in Different Age Groups

According to the results of this survey, people of different ages still have different attitudes towards plastic toys. Young people around the age of 18 mainly focus on their preferences and

interest in plastic toys, and occasionally pay attention to whether they are made of plastic, while people aged 30-55 will give more consideration to whether they will harm children and brand, The main concern of people over 55 is the price of toys, and few people pay attention to whether it is plastic or not. It can be seen that when people pay attention to interest, price and brand, few people pay attention to the problem of plastics. Although many people pay attention to the corresponding problems and know their importance, they are also willing to actively respond to relevant policies.

Young people around the age of 18 tend to be more interesting, and most of them pay more attention to national policies and interests. The main problem is that they don't know much about the harm of plastic toys or don't care about it at all. Therefore, as long as science popularization is in place, people of this age have strong action force and are easier to make changes. Most people aged 30 to 55 buy toys for their children, so they pay more attention to the safety of toys. Most of them decide whether to buy toys according to whether they are big brands, and there are few cases that do not support buying. For old toys, they mostly choose to give them to other children or recycle them, and most of them are unaware of the harm of plastic toys. Therefore, there was not enough consideration in this regard. After the investigation, they said they had learned some knowledge and were willing to take the initiative to improve. People over the age of 55 are mainly grandparents. When buying toys, they mostly consider the price and whether children like them. However, due to the relatively closed information, they do not understand the impact of plastics on energy conservation and emission reduction, or more people do not pay attention to this aspect [5].

2.3. How to Deal with Plastic Toys

It is undeniable that plastics do save businesses costs. According to the plasticity of plastics, a variety of children's toys emerge one after another. In 2021, the plastic ban order was issued, and all walks of life are fully implemented. Before that, parents were not sensitive enough to plastics. When children see bright colored toys, they will always put them down, and parents will be more willing to consume them because they are not easy to get dirty and bad. When it was introduced this year, people began to pay more attention to plastics and improve their sensitivity. For the purchase of plastic toys, parents are more willing to consider other aspects. A survey shows that the purchase of plastic toys is declining day by day. With the continuous improvement of living standards, the style and quality of plastic toys are higher and higher, and the storage time is longer and longer.

First, put away the toys temporarily. Children's preferences for toys are mostly based on freshness. As you have it for longer, the freshness slowly decreases. Put away the toys temporarily and take them out after a period of time, which will make children fresh again and achieve the effect of repeated utilization. Second, second-hand acquisition stations. With the popularity of sharing economy, everything has the value of secondary use. Plastic toys are no exception. Parents can find some second-hand toy purchase stations, toy exchanges, toy maintenance stations and so on. It can not only dispose of toys at home, but also make the best use of toys and bring joy to more children. Third, modification method and transform waste toys into "new" toys. DIY with children at home and turn waste toys into new babies can not only promote parent-child feelings, but also improve the baby's practical ability. Fourth, donation and transfer. With the consent of the child, donate these toys to children in need or to the children of relatives and friends. Not only make the best use of toys, but also gradually cultivate children's love. These are good ways to deal with plastic toys.

3. Necessity of Energy Conservation and Emission Reduction and People's Awareness of Energy Conservation and Emission Reduction

3.1. Necessity of Energy Conservation and Emission Reduction

(1) Role of energy. Energy is an indispensable thing in our daily work and life. We use energy or energy related things all the time, from cooking in the family stove and electric lighting, to going out by car and motorcycle, from the use of chemical fertilizers and pesticides, to the field operation of agricultural machinery such as tractors, from the use of tap water to agricultural field irrigation, Without energy, we can hardly live and work.

(2) The current use of non renewable energy. Non renewable energy is the most widely used, convenient and widely used energy in the world. It has been closely related to our daily life. Once it is stopped, it will seriously affect our work and life. It is indispensable at present. The world's non renewable energy is limited. According to relevant data reports, the proven oil and natural gas in the world can only be used for 40 years and 60 years. Even if new oil and gas fields can be explored, they are limited. China's energy resources are relatively insufficient, and its per capita ownership is far lower than the world average. Among them, the per capita energy resources of oil, coal and natural gas are only 55.5%, 11.0% and 4.3% of the world average respectively.

(3) The current use of renewable energy. Renewable energy refers to the energy that replaces non renewable energy, mainly including the use of nuclear energy, solar energy, wind energy, hydropower and other power generation, the use of grain to produce alcohol, and the use of agricultural waste and domestic waste to produce biogas to replace coal and oil and gas resources. At present, various countries are studying it, but due to the high energy cost, immature technology and food security, it is not widely used, accounting for only 13.4% of the basic energy consumption.

(4) Energy efficiency. The effect of China's energy utilization is significantly lower than that of other countries in the world. According to relevant statistics, according to the energy consumption of the same amount of GDP, if Japan is 100%, the EU is 160%, the United States is 270%, South Korea is 330%, ASEAN is 430% and China is 900%, so China's energy use efficiency is low and energy waste is very serious.

(5) What should be left for future generations. Each of us is very concerned about our future generations and will leave as many assets as possible to our next generation. However, do we also hope that future generations will have enough energy? Non renewable energy is limited and will run out one day. Is it to save energy for our next generation, or to leave an earth full of holes and hollowed out all energy, so that our next generation is in an era of great shortage of oil, coal and natural gas? Therefore, whether for the world, the country or ourselves, we should save energy.

(6) Environmental problems have become serious social problems. Human beings obtain material and energy from the environment and create the material and wealth needed by human beings. At the same time, it also returns pollutants to the environment, causing environmental pollution and ecosystem damage, which is an environmental problem. At present, environmental problems have affected our lives. Due to the increasingly serious air pollution, the intensification of the greenhouse effect, the destruction of the atmospheric ozone layer and other reasons, global warming has led to frequent natural disasters, resulting in the reduction of global grain production and even the lack of grain harvest in some areas; The increase of harmful components in the air due to air pollution has led to a significant increase in the number of people suffering from cardiovascular and respiratory diseases and cancer; Food safety cannot be guaranteed due to various kinds of pollution. In short, the destruction of the ecological balance and the serious deterioration of the environment will seriously endanger

human health. The development will eventually make nature lose the ability to support human survival.

3.2. People's Awareness of Energy Conservation and Emission Reduction

With the acceleration of social development, environmental problems are more and more worthy of everyone's attention. Protecting ecology has always been a common problem of mankind, which requires everyone to work together. Everyone is a link in the social ecological chain and a community of shared destiny. No one can stay out of it. Facing the severe test of environmental pollution, we must strive to respond to the measures issued by the state. But the reality is that people don't have a deep understanding of energy conservation and emission reduction, and some people don't even involve this concept at all. In recent years, the state has been vigorously advocating that green water and green mountains are golden mountains and silver mountains. While social development, we must ensure ecological balance, so as to ensure sustainable development. Therefore, it is very important to improve people's awareness of energy conservation and emission reduction.

Plastic toys can be seen everywhere in daily life, but people are not aware of the harm it may bring to the environment. Once plastic toys are no longer used, some parts flowing into the environment cannot be degraded, which is bound to pollute the environment. It is undeniable that children can not grow up without the use of plastic toys. This puts forward higher requirements for plastic toy producers. Producers should use degradable and less harmful materials in the production process, which can ensure the safety of users and will not cause unnecessary pollution to the environment.

Plastic toys can be extended to many aspects. For example, non degradable plastic bags, supermarkets, shopping malls and pharmacies should encourage people to use less or not. Reduce express plastic packaging, disposable plastic woven bags, etc., and reduce the use of non degradable plastic bags. In shopping malls, supermarkets, pharmacies, bookstores and other places, people can carry environmental protection cloth bags, paper bags and other non plastic products and degradable shopping bags, and promote degradable packaging bags for fresh products. Moreover, manufacturers can increase the R&D and application of technology, strive to improve product performance and reduce application costs. Improve the relevant standards of degradable plastics to ensure the safety and controllability of degradation products. In addition, relevant departments should also standardize the recycling and disposal of plastic waste. Strengthen the classified collection and treatment of recyclables such as plastic wastes. For plastic waste with recycling value, realize high-quality and standardized resource utilization.

Standardizing the use of plastic toys is only a rare aspect of energy conservation and emission reduction. There is still a long way to go to truly achieve energy conservation and emission reduction. Everyone must bear in mind the awareness of energy conservation and emission reduction in order to achieve results. Energy conservation and emission reduction is undoubtedly an important part of maintaining ecology. It is a long-term and irreversible process. It also requires the efforts of each of us to jointly create an environment with green mountains, green water, blue sky and white clouds.

4. Countermeasures and Suggestions for Promoting the Development of Children's Toy Industry

4.1. Improve the Public's Attention to Relatively Neglected, Such as Plastic Toys

The state can promulgate corresponding policies and strengthen publicity. Government organs and their staff play an exemplary role in social activities. In the work of energy conservation and emission reduction, grass-roots government organs should first unify their thinking and

understanding, create a good atmosphere of energy conservation, strengthen publicity, paste relevant energy-saving slogans in eye-catching places in public areas, such as toilets, hand basins and public corridors, remind staff to save energy and improve the thought of energy conservation of all staff. According to their actual situation, government organs can pay attention to management in energy conservation, often inspect and supervise, find out the deficiencies in the implementation process, and put forward rectification opinions in time to promote the development of energy conservation. According to the survey data, when green environmental protection conflicts with their own interests, a quarter of people choose their own interests, indicating that most people do not have enough awareness.

4.2. Timely Update Pollution Reduction Technology Policy

The emission reduction technology policies formulated by enterprises in production are closely related to the emission reduction achievements of enterprises. Therefore, local governments should, in combination with relevant scientific research institutions, vigorously carry out R&D and innovation of emission reduction technologies, and conduct in-depth research on emission reduction technologies through the establishment of special funds. Facts have proved that the more R&D investment in emission reduction technology, the higher the R&D return. At the same time, relevant departments should also improve the protection system of emission reduction patent technology, so as to protect the intellectual property rights of relevant enterprises, and improve the economy of enterprises' research and development of emission reduction technology and emission reduction products, so as to reduce the cost of emission reduction, reduce social energy consumption, improve the economic benefits of enterprises, and then create a good ecological environment.

4.3. Improve the Legal System and Strengthen Supervision, Inspection and Law Enforcement

We will improve energy conservation and environmental protection standards and carry out special law enforcement inspections on energy conservation and emission reduction. Cooperate with the National People's Congress to speed up the promulgation of the energy conservation law (Revised) and the circular economy law, and speed up the formulation (Revision) of supporting laws and regulations. Organize the formulation of 16 mandatory national standards for energy consumption limits of high energy consuming products, and formulate (revise) 16 energy-saving design specifications, 21 energy-saving basic and method standards and 17 energy efficiency standards for terminal energy consuming products (equipment).

4.4. Improve Policies and Form Incentive and Restraint Mechanisms

We will actively and steadily promote the price reform of resource products, improve fiscal policies conducive to energy conservation and emission reduction, and implement tax policies conducive to energy conservation and emission reduction. Adjust the government procurement list of energy-saving products and study and try out the measures for compulsory procurement of energy-saving products. Broaden financing channels and enhance domestic awareness of energy conservation and emission reduction.

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