

# A Comparative Study of International Experience in Electronic Cigarette Control

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**Abstract:** In recent years, on the one hand, e-cigarettes have developed rapidly, on the other hand, due to the frequent problems in quality, technology, safety and market supervision, disputes are increasing. Some countries and regions began to control electronic cigarettes. This paper takes the regulation of e-cigarette industry as the main purpose, takes the problems and their causes in the development of e-cigarette industry as the research object, uses case analysis method to describe the dispute of e-cigarette, and introduces the current situation and problems in the development of e-cigarette control at home and abroad. Through the analysis and summary of foreign practices and experience in electronic cigarette control. Finally, this paper suggests that the relevant departments of our government should control e-cigarettes as tobacco products.

## 1. Introduction

### 1.1 Origin and Development of Electronic Cigarette

Electronic cigarette, also known as electronic nicotine delivery system, is a product that delivers nicotine and / or other substances to the respiratory system by atomizing the electronic cigarette liquid through the atomizer [1]. In 2004, electronic cigarettes came out in China, and then gradually flowed from China to Europe, America, Japan and other countries. E-cigarette has a similar smoke, scent and feeling. The smoking experience is formed through the method of a heating element that atomizes a liquid solution called the e-liquid, after turning the nicotine substance into vape allowing users to inhale. [1]. The report of the sixth conference of the parties (cop6) of the World Health Organization Framework Convention on tobacco control (FCTC) shows that [1]. In 2013, the global spending on e-cigarettes was US \$3 billion. By 2014, there were 466 e-cigarette brands, and the sales volume will be expected to increase 17 time in 2030. Most of the world's e-cigarette products or accessories are produced in China, especially Shenzhen produce 90% of the essentials electronic cigarette units, However, more than 90% of e-cigarettes are sold abroad, with the United States being the largest export market. E-cigarettes have developed rapidly since they invent. At the same time, many problems in quality, technology, safety and market supervision have caused numerous disputes [2-4]. Therefore, in order to regulate the electronic cigarette market, some countries and regions began to control the electronic cigarette. At the same time, the regulations and standards on electronic cigarette are formulated in order to give technical support for electronic cigarette control. There are few regulations and standards on electronic cigarettes, and the legal status is uneven. Because there are no national and industry regulations and standards in our country, through the analysis and summary of domestic and foreign regulations and standards on e-cigarettes, we can provide reference for the future e-cigarette control and development of standards.

### 1.2 Debate on Electronic Cigarettes

Market research has found that consumers choose to use e-cigarettes rather than traditional cigarettes, mainly because they believe. (1) Electronic smoke does not burn, and its harm is even less. (2) E-cigarettes can help you quit smoking or reduce the number of smoking. (3) E-cigarettes are rarely restricted by smoking areas and can be freely used in more places. (4) E-cigarettes can be

reused, with less overall consumer spending. (5) Electronic cigarette is a high-tech product which represents fashion and new trend. For example, a survey of 3587 consumers (from many countries) shows that they choose e-cigarettes because they think. The harm of electronic tobacco was lower than that of traditional tobacco (84%). It can help to quit smoking or prevent relapse (77%). It can reduce the desire after not smoking traditional cigarettes (67%). It can be used in places where it is forbidden to draw traditional cigarettes (39%) [5]. And a British survey shows that consumers choose e-cigarettes because they think. It can satisfy the desire of smoking (60%). Can help reduce the number of traditional cigarettes (55%) can help quit smoking (55%). It can be used in places where it is forbidden to draw traditional cigarettes (39%) [6].

A very important factor for consumers to form the above understanding is that e-cigarettes are not regulated by the government in many countries and can be widely advertised, publicized and promoted in various media. The above reasons for consumers to choose e-cigarettes is exactly the selling points that e-cigarette suppliers strive to publicize. The focus of controversy in recent years, it mainly focuses on three aspects.

### **1.2.1 Is Electronic Cigarette Safe**

Some studies have shown that although electronic cigarette contains some toxic substances, its content is 9-450 times lower than that of traditional cigarette [7]. However, there are also studies that show that electronic cigarettes contain a large number of harmful substances, and serious injuries are often caused by the use of electronic cigarettes [8]. South Korean health authorities have used liquid chromatography tandem mass spectrometry and gas chromatography-mass spectrometry to identify and quantify pollutants and additives in e-cigarettes. The preliminary results show that 10 kinds of poisons can be identified and quantified in the detected e-cigarettes, and the nicotine content indicated in the label of the detected e-cigarettes may not be consistent with the actual content.

### **1.2.2 Can e-Cigarettes Help Quit Smoking or Reduce Smoking**

On 18 June 2012, the Convention Secretariat issued a report on “electronic nicotine delivery systems, including electronic cigarettes”. Since then, the World Health Organization issued a statement on July 9, 2013. “The effectiveness of electronic nicotine delivery systems to help people quit smoking has not been scientifically demonstrated. The implied health benefits associated with these claims have not been confirmed or may be based on inaccurate or misleading information. Therefore, consumers are strongly advised not to use certain electronic nicotine delivery systems or electronic cigarettes until the appropriate national regulatory bodies consider them to be safe, effective and of acceptable quality. “

### **1.2.3 Should e-Cigarette Advertising Be Prohibited?**

Many surveys have found that, despite the electronic cigarette advertisements, these advertisements contain a large amount of tobacco information, which inevitably reminds the audience of smoking, thus promoting adults to continue smoking and inducing teenagers to try to smoke. At present, Malta, Poland, Argentina and other countries have banned e-cigarette advertising.

## **2. Main Practices and Experience of Electronic Cigarette Control in Foreign Countries**

The World Health Organization and many governments have realized that it is not only necessary but also urgent to strengthen the control of e-cigarettes. There are great differences in the control of e-cigarettes in different countries. The control measures of e-cigarettes in various countries mainly focus on five aspects: production, sales, use, packaging and labeling, advertising sponsorship and taxation [9-10].

### **2.1 Production Control**

There are relatively few countries and regions that explicitly control the production of electronic cigarettes. Brazil, Greece, Israel, the United Arab Emirates and some local governments in India prohibit the production of e-cigarettes. Chile, Malaysia, Taiwan and other countries and regions have

also introduced regulations on the production of e-cigarettes. It should also be noted that for the production of e-cigarettes, the regulation does not necessarily reflect the simple prohibition or restriction, but more often it is “invisible”. For example, strict approval of new e-cigarettes is actually a regulation - it sets a threshold for enterprises to enter the industry.

## **2.2 Sales Control**

### **2.2.1 Prohibit the Sale of All Types of Electronic Cigarettes**

Brazil, Greece, Saudi Arabia, Singapore, Seychelles and other countries expressly prohibit the sale of all types of electronic cigarettes.

### **2.2.2 Restrictions on Sales of Electronic Cigarettes Containing Nicotine**

Australia, Belgium, France, Japan, Malaysia and other countries expressly restrict the sales of nicotine containing electronic cigarettes. According to different countries, most countries require a license or medical license to sell nicotine containing electronic cigarettes.

### **2.2.3 Set the Minimum Purchase Age of e-Cigarettes**

Many countries have set the minimum purchase age for e-cigarettes. Honduras, South Korea and the United States, Australia, the United Kingdom, France and Italy are set at 21, 19 and 18 respectively.

## **2.3 Use Control**

Cambodia, Jordan, the United Arab Emirates and other countries prohibit the use of electronic cigarettes, while Austria, Australia, Belgium, South Korea, Malta, Spain, Wales and other countries prohibit the use of electronic cigarettes in public space. New Jersey, North Dakota, Utah and other states in the United States have implemented “indoor electronic smoke ban”.

## **2.4 Packaging and Advertising Sponsorship Control**

In addition, Indiana, New Mexico, South Dakota, Utah and other states in the United States have more detailed regulations on electronic cigarette packaging materials and signs, which are strictly prohibited. The behavior of electronic cigarette tampering with packaging. According to the governments of Argentina, Australia and other countries, the relationship between the ban on tobacco advertising, promotion and sponsorship and the ban on the sale of e-cigarettes is intrinsic. FDA of the United States has put electronic cigarette into the advertising supervision, and enterprises need to prompt the composition and health risks of cigarette oil.

## **2.5 Tax**

At present, countries that levy taxes on e-cigarettes include Italy, South Korea, Togo, and some states in the United States also levy or propose taxes on e-cigarettes. The European Union also has a tax plan for e-cigarettes. South Korea imposes a special health tax of \$1.65 per milliliter of nicotine containing oil. Togo levies up to 45% on e-cigarettes. Italy is the first country in the European Union to levy taxes on e-cigarettes. In January 2015, it further increased the tax rate of e-cigarettes. In the United States, the electronic cigarette tax rate in Washington, D.C. is the same as that of traditional cigarettes. Minnesota's e-cigarettes and traditional cigarettes tax rate is 95% of wholesale costs. Kansas levies \$0.30 per milliliter of oil. Louisiana and North Carolina levy \$0.05 per milliliter of nicotine containing oil.

## **3. The Current Situation of China's Electronic Cigarette Control and the Problems in the Industrial Development**

### **3.1 Current Situation of Electronic Cigarette Control in China**

#### **3.1.1 Production Status**

In recent years, the production and sales volume of e-cigarettes in China has shown a rapid

development trend. First, the growth rate is very fast. Taking Guangdong Province as an example, through my investigation and interview on the cigarette market of cities with different economic development levels in Guangdong Province, I found that at present, Shenzhen alone has more than 500 cigarette markets. About 90% of the world's e-cigarettes are produced in China, of which Shenzhen's output value accounts for about 90%, and Shenzhen has formed a complete industrial chain integrating production, raw materials, sales, R & D, packaging and export. China's e-cigarette enterprises are mainly based on ODM mode. With the start of the domestic market and the enhancement of brand awareness, independent brands of domestic e-cigarette enterprises also began to rise.

### **3.1.2 Consumption Status**

Although more than 90% of the world's e-cigarettes are produced in China, China's consumer market is still very small, and the penetration rate of China's e-cigarettes (less than 1%) is far lower than that of Europe and the United States and other countries [13]. The electronic cigarette industry takes China as the manufacturing center and Europe and America as the demand center. According to a report jointly issued by the World Health Organization and the United Nations Development Programme, more than one million people die from smoking related diseases every year in China. It can be concluded that the development of e-cigarettes to replace the traditional Chinese tobacco market has a very broad prospect. Another part of the non-smoking people, in order to pursue fashion, has tried to touch the electronic cigarette. The electronic consumption market has begun to show a rapid upward trend. At the same time, the electronic cigarette market is also maturing and expanding. According to the survey data of five typical cities in China by e-cigarette online website, the utilization rate of e-cigarette is 3.4%, and the top three cities are Beijing, Shanghai and Guangzhou. According to the results of a questionnaire survey on consumers using e-cigarette, it is estimated that each person consumes 118 cigarettes per year. The current consumption situation of e-cigarettes also shows a feature, that is, they are popular among teenagers. Therefore, in China, e-cigarettes are very likely to become the entry-level products for students to smoke, which will lead to an increase in the number of teenagers smoking. Due to the lack of laws and regulations on e-cigarettes in China, e-cigarettes are not subject to the Framework Convention on tobacco control and the protocol on the elimination of the illegal trade in tobacco products. Online and offline sales play their respective roles. With the help of the universality and convenience of the Internet, they will continue to increase their opportunities to approach and influence young consumers.

### **3.1.3 Standard Development Status**

According to the official website of the National Standardization Management Committee, the national standard plan "electronic cigarette", "determination of nicotine, propanol and glycerol in electronic cigarette liquid" passed the review in July 2018, and has not been approved yet. Two competent standards departments are the State Tobacco Monopoly Bureau, which is under the centralized jurisdiction of tc144 (National Tobacco Standardization Technical Committee) and reported and implemented. Among them, "electronic cigarette" is a national compulsory standard, that is, a standard implemented by means of laws, administrative regulations and other compulsory means within a certain range, which has the legal attribute, that is to say, enterprises must strictly implement it. The gas chromatography method for the determination of nicotine, propylene glycol and glycerol in electronic cigarette liquid is recommended. In December 2017, the electronic cigarette industry committee of China Electronic Chamber of Commerce issued the group standards for electronic cigarette industry, including the general specification for electronic cigarette atomizing appliance products and the specification for electronic fuming liquid, which cover the requirements for electronic fuming appliance products, requirements for finished products, test methods, labels, marks, packaging, transportation and storage, and are mainly applicable to the production, test and storage of electronic cigarette. Inspection, management, etc. As an electronic cigarette group standard, it marks that the whole industry has begun to move towards the standardized development path, but it is not a national standard or a mandatory standard.

### **3.1.4 Management Status**

In August 2018, the state market supervision administration and the State Tobacco Monopoly Administration jointly issued the circular on banning the sale of electronic cigarettes to minors. The circular pointed out that in order to avoid the adverse effects of e-cigarettes on teenagers, e-cigarette business enterprises and individuals shall not sell e-cigarettes to minors. According to the circular, China has not yet issued national standards for electronic cigarette products. All kinds of electronic cigarettes sold in the market have strong randomness in raw material selection, process design, additive use and production. The quality of e-cigarettes is also mixed. Some products may have quality and safety risks, such as smoke leakage, poor batteries and unsafe ingredients. In addition, the core component of most electronic cigarettes is purified nicotine (a highly toxic chemical), and the respiratory system of teenagers is not mature. If the electronic cigarettes are inhaled for a long time, the lung function will be affected and damaged, and even nicotine poisoning and some other safety risks may be caused.

## **3.2 Problems in the Development of Electronic Cigarette Industry in China**

Electronic cigarette has the dual attributes of similar tobacco products and electronic products. In terms of product form, product function, consumption experience, etc., it has both similarities and great differences with traditional cigarettes.

### **3.2.1 Unclear Definition of Electronic Cigarette Nature**

In the report of the eighth session of the WHO Framework Convention on tobacco control in October 2018, it was noted that heating tobacco products were recognized as tobacco products. Up to now, there is still no clear definition of the identity of e-cigarettes in China, and there is no regulation on whether to prohibit the use of e-cigarettes in public. For a new industry, it is normal for China to have different regulatory attitudes from other countries, but we can't even understand and determine the nature of it, which will hinder its development to a large extent.

### **3.2.2 Unclear Functions of Electronic Cigarette Products**

At present, most of the electronic cigarettes sold on the market in our country are under the banner of quitting smoking. It is said that the electronic cigarettes transfer the liquid gasification nicotine without providing tar and carbon monoxide, and some even make false publicity and excessive publicity. The producers just catch the consumption psychology of some consumers quitting smoking and attract the attention of many people who want to quit smoking. However, safety and degree of nicotine consumption of e-cigarettes have yet to be confirmed, especially as an assistant tool for smoking cessation.

### **3.2.3 Electronic Cigarette Products Are Not Standardized**

The only e-cigarette Industry Committee of China Electronic Chamber of commerce developed the e-cigarette liquid alliance standard in December 2017. It was announced in May, but it is still unknown how the credibility of the standards formulated by this industry association is, how the legal binding effect is, and how the standardized effect of the whole development of electronic cigarettes needs to be tested in practice.

### **3.2.4 Disordered Market and Supervision**

In the market, a variety of e-cigarette brands are constantly pouring into the market, with various kinds of quality, fierce vicious competition, and the market in chaos, which also caused a lot of quality and safety problems. On August 30, 2018, the State Administration of market supervision and administration and the State Tobacco Monopoly Bureau jointly issued a circular banning the sale of electronic cigarettes to minors, limiting the sale of electronic cigarettes. Before that, management measures for electronic cigarettes in China were almost zero. So far, any consumer can still buy e-cigarettes on the Internet, and there is no need for any formalities when buying, and there is no hint that minors can't buy them.

### 3.2.5 The Impact of e-Cigarettes on Health is Not Clear

Whether the electronic cigarette is healthy, safety and environmental protection have not been certified by the authority. There is also no scientific evidence that the use of electronic cigarettes can help quit smoking.

## 4. Suggestions on Regulating Electronic Cigarette Control in China

Electronic cigarette first appeared in China, and now China is also the largest electronic cigarette producer in the world. In recent years, the number of domestic e-cigarette enterprises has increased rapidly, and the pace of foreign enterprises, especially transnational tobacco companies, entering the e-cigarette market in China has been significantly accelerated (for example, Imperial Tobacco Company spent a lot of money to acquire the “smoke like” e-cigarette business). According to relevant data, in 2013, there were about 900 e-cigarette manufacturers in China, nearly double the previous year. The export value of e-cigarettes is about 3.5 billion yuan, an increase of 150% over the previous year [14]. However, with the rapid growth of the market, there are many serious problems in the field of electronic cigarette in China. At present, it is most urgent to clarify the product classification of e-cigarettes as soon as possible, and on this basis to speed up the establishment of e-cigarette control framework in line with China's national conditions. Combined with international advanced experience and China's national conditions, we prefer to control electronic cigarettes as tobacco products. This is mainly reflected in three aspects.

First, e-cigarettes have many same or similar characteristics with traditional cigarettes in appearance, usage and harmfulness (mainly nicotine harm). As tobacco product control, there are both high social acceptance and precedent in the United States.

Secondly, China has a set of mature and complete tobacco product control framework. Taking e-cigarette as tobacco product control, we can directly use the current national tobacco monopoly system and management system to quickly control the whole process of e-cigarette production, sales, import and export, which is very important for protecting product quality, standardizing market behavior, safeguarding consumers' rights and interests, and increasing national taxes Advantageous.

Third, e-cigarette is a new product which has not yet been mature and has been widely debated, but there are a lot of advertisements. These advertisements may not only convey false, exaggerated and unconfirmed information, but also induce the bad effect of smoking. Taking e-cigarette as a tobacco product control, we can control electricity according to the current tobacco advertising laws and regulations in China The strict control of tobacco advertising can not only avoid misleading the public by electronic tobacco, a new product with uncertain effect and risk, but also promote tobacco control in China.

To sum up, electronic cigarette is a new product developed in recent years, and there is no mature international practice to learn from. Combined with international experience and China's national conditions, the author thinks that it is a more feasible scheme to control electronic cigarettes as tobacco products in China. In addition, the relevant departments of the state should strengthen overall planning and coordination, accelerate the research and formulation of supporting policies and measures such as process specifications, quality standards, testing and inspection, investment and taxation, and actively promote China's e-cigarette market to be on the track of legalization, standardization and scientific development as soon as possible.

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