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# THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN CHINA, 2017

## 2017 年中国钨制品价格构成与上涨因素

DR. HANNS

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# THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN CHINA, 2017

## BRIEF INTRODUCTION TO THE AUTHOR

### CHINATUNGSTEN ONLINE

### CTIA GROUP

As the 1st E-commerce company of Tungsten (W), Molybdenum (Mo), Rare Earth (RE) in China, China Tungsten Online Manu. & Sales (CTOMS) was founded in 1997 based on China's the 1st and top tungsten website [www.chinatungsten.com](http://www.chinatungsten.com). As its specialized design, professional manufacturing, excellent service and powerful information database, CTOMS is not only the most authoritative information source of Chinese and English information of W Mo and RE products globally, but also the best comprehensive application solution provider of W, Mo and RE, both chemical materials and machined products , such as tungsten oxide, metal, cemented carbide and heavy alloys.

CTOMS has been created more than 1 millions web pages and Wechat information message of W, Mo and RE news, price and market research, analysis . The web news.chinatungsten.com, [www.ctia.com.cn](http://www.ctia.com.cn) are the world's top index websites of tungsten which have received 1 billions visits from 1997.

The major business of China Tungsten Online & CTIA group(established in 2018 as a branch of CTOMS), is to complete product design, R & D with customers and provide customers with processing and integration services. In the past 2 decades, it has provided more than 100,000 different types of W, Mo & RE products to more than 10,000 customers all over the world. Years experience and technology accumulation have laid a foundation for promoting the flexible and intelligent manufacturing of customized products.

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## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

CHINA, 2017

PART I OF X

### Cost Composition of Tungsten Concentrate from Micro Factors

August 23, 2017

This article was written in 2017 and published on the website and WeChat of China Tungsten Online from August 23 to early September 2017. Therefore, many views should be considered comprehensively according to the situation at that time, but the author's analysis of the cost composition of tungsten products and the analysis logic of price influencing factors are of great reference value.



Tungsten Ore/ Wolframite

Tungsten resource is one of the few advantageous resources in China. China's tungsten resource reserves account for 70% of the world's proven tungsten resource reserves, ranking the first in the world. According to the average calculation over the years, China's tungsten products, except for those prohibited by China's Central Government, including

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Tungsten Oxide, Powder, Metal, Alloy and Carbides and supply account for about 80% of the world's annual output. However, for a long time, the price of China's tungsten resources/products at home and abroad has been subject to the influence of factors such as market, industrial policy and international trade rules for a long time, which makes China's non renewable rare resources sell "cabbage price", even lower than the due cost price.



△Mine Roadway for Underground Tungsten Mining





This is not sensational, because the prices of various tungsten products have increased significantly recently, and the market fluctuates greatly. Many friends and customers at home and abroad have inquired in various forms, while the number of inquiries and visits of China Tungsten online WeChat and China Tungsten online news network have reached a record high, Therefore, I hope to make a simple analysis of the cost and price of tungsten concentrate with my simple experience and limited knowledge, and analyze the future price trend from a strategic perspective.



△Tungsten Mines under Developing in Mountainous Areas of Jiangxi Province, China

### Reference Technical Data & Files

#### **Q: Typical Tungsten Products**

A: Raw Material: Tungsten (Wolframite) Ores, Tungsten Concentrate

Intermediate Tungsten: Sodium Tungstate, Tungstate Acid, Tungsten Oxide, Tungsten Trioxide(WO<sub>3</sub>)

Tungsten Metal: Tungsten Powder, (WP) Tungsten Metal Wire Sheet, Rod, Needle and Parts

Tungsten Carbide: Tungsten Carbide Powder (WCP), Tungsten Cemented Carbide(TC)

Tungsten Heavy Alloy(WHA): Tungsten Heavy Alloy(WNiFe, WNiCu) Tungsten Copper Tungsten Silver, Tungsten Gold (Plated)Alloy etc.

#### **Q: What's Tungsten Product Prohibited Exporting by China's Central Government**

A: Raw Material, such as Tungsten Ores, Wolframite, Tungsten Concentrate.

More details about the tungsten products, please visit [www.tungsten.com.cn](http://www.tungsten.com.cn)

More Details for the prices and news of tungsten, please visit [www.ctia.com.cn](http://www.ctia.com.cn)







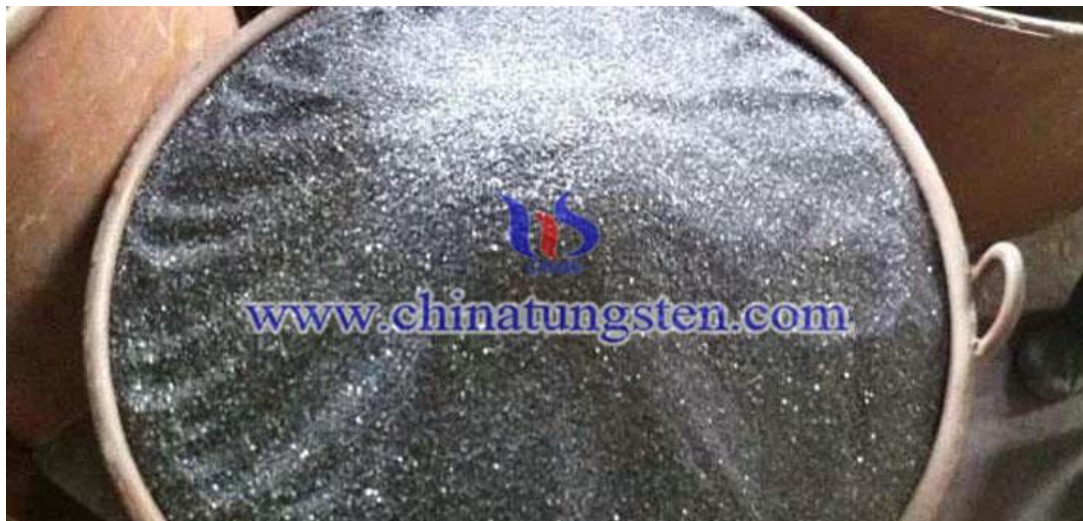
## 1. Price Composition of Tungsten Products

The cost and price of tungsten concentrate are the basis and source of the cost and price of all tungsten products. It has a decisive impact on the cost and price of tungsten metal products and tungsten alloy products smelted and processed based on tungsten concentrate. Therefore, any change in the cost and price of tungsten concentrate will attract the attention of relevant market people, Of course, this is only the concept of cost and price in the micro market.

The micro cost and profit composition modes of tungsten product smelters are as follows:  
**A** (tungsten concentrate price) + **B** (processing cost) + **C** (tax) + **D** (profit) = **S** (tungsten product sales revenue.)

We analyze the constituent relationship between these costs and sales revenue and profit one by one:

**A**, the price of tungsten concentrate and purchase price of tungsten concentrate, or average market price of tungsten concentrate; This is a variable item; It can be divided into two parts. The first part is that the price of tungsten concentrate changes with the market, and the second part is the recovery rate of tungsten product smelter, that is, the different effective utilization capacity of metal tungsten contained in tungsten concentrate. The first part is driven by the market, while the second part varies with the technical ability and management level of different enterprises.



△Wolframite Concentrate





**B**, processing cost of tungsten products. Generally, the processing cost of tungsten products smelting enterprises basically includes water and electricity, labor, materials and auxiliary materials. The unified enterprise cost is fixed at a certain time, unless the raw material cost and labor cost rise.

**C**, tax. If all market participants can pay tax according to law, the tax cost is fixed under the unified tax system, and the tax cost of enterprises is fixed and gradually reduced after the reform of state-owned tax to value-added tax is basically completed. However, with the tightening of China's environmental protection policy and the strengthening of law enforcement, the environmental protection cost of both tungsten mines and tungsten smelting enterprises is increasing. This is also an increasing and changing part.

**D**, the profit of the enterprise is the result of changing with the market fair price, enterprise processing cost, tax and other factors. The result is positive. Congratulations, the enterprise's operation and management ability is higher than the industry average level and has a certain profitability. On the contrary, it will be sad and not far from closing the door. Therefore, this change factor is not completely controlled by the enterprise, but also the factor that determines the fate of the enterprise.

To sum up, the profit of tungsten products smelting and processing enterprises  $d = s$  sales revenue - (a tungsten concentrate price + B processing cost + C tax).



△Yellow Tungsten Oxide





From the above formula, we can see that the price of tungsten concentrate in the three main cost components is the main variable cost and influencing factor. Through the analysis of the second part of this paper, we can understand that the cost of tungsten concentrate includes not only micro market cost, but also policy cost and national strategic cost. At present, the market price of tungsten concentrate is RMB 100000 / standard ton (China Tungsten online market quotation on August 22, 2017) It only reflects the micro cost of tungsten concentrate. In fact, this is not only the highest price in the tungsten concentrate market, but also the cost of tungsten concentrate calculated from the macro and strategic perspective of no less than 150000 / standard ton. Thank you for paying attention to our information. If you want to continue to understand the macro cost analysis of tungsten concentrate, please continue to pay attention to the continuation of expert comments tomorrow. (This article is original, if reprinted, please indicate the source.)





## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

CHINA, 2017

PART II OF X

### Cost Composition & Price Trend of Tungsten Concentrate from the Perspective of Meso Economy

August 24, 2017

Yesterday, we mentioned that the current market price of tungsten concentrates of RMB 100,000 / **standard ton** (quoted by China Tungsten online market on August 22, 2017) only reflects the micro cost of tungsten concentrate. In fact, this is not only the highest price in the history of tungsten concentrate market, but also does not meet the cost of RMB 150,000 / standard ton of tungsten concentrate that should be calculated from the macro and strategic perspective of strategic materials.

We say this because it exceeds the cost of tungsten concentrate in the general accounting sense and the current actual cost of an enterprise or mine mining and smelting tungsten concentrate mentioned in the first part of this paper, that is, the cost of accounting statements based on raw material price + hydropower + personnel salary + tax + profit, which involves national politics, economy, labor force. Such policy costs are factors beyond the control of enterprises, but sometimes have a significant impact. In fact, such factors are basically fixed and not controlled by production enterprises in a period of time. However, we also simplify the analysis as macro costs in this paper. This kind of institutional cost involves the impact of government, industry management, regulations and environmental protection systems on the price of tungsten concentrate. We also simplify the macro cost composition of tungsten products as follows:

**Standard Ton: the standard generally refers to a metric ton with tungsten trioxide content of no less than 65% in the tungsten industry in China.**

#### The First, the Exploration Cost of Tungsten Resources

The exploration function of tungsten mines in China is not carried out by the main body of mine mining. According to China's current management system, the exploration right is obtained by the exploration department / enterprise. After exploring the mine resources,

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according to the exploration cost and mine resource status (i.e., reserves, storage conditions, ore yield, dilution rate, recovery rate, recovery rate, market price, development and utilization conditions, etc.) Factors are sold to mining development entities / enterprises in the form of exploration right transaction, so the basic cost of tungsten mining development enterprises is the transaction price of mining right, that is, the price of tungsten resources.



△Tungsten Ore

Taking wolframite mines as an example, at present, the average recovery rate of domestic mining is 80% and the average recovery rate of beneficiation is 82%. Based on this calculation, according to the relevant national standards for tungsten concentrate (see the annex herein), the exploration cost of wolframite concentrate per standard ton is not calculated by dividing the price / cost of proved mining right by reserves, Instead, the average cost shall be calculated based on the actual available tungsten concentrate quantity obtained from 80% x82% of the proved reserves.

### **The Second, Cost of Tax of Tungsten concentrate**

According to the tax provisions on tungsten concentrate given in the notice on implementing the reform of ad valorem calculation and collection of rare earth, tungsten





and molybdenum resource tax (CS [2015] No. 52) issued by the Ministry of Finance and the State Administration of Taxation on April 30, 2015, the resource tax of tungsten concentrate is calculated based on 6.5% of the sales of tungsten concentrate (see the annex for specific calculation formula and method).

According to the provisions of the notice, "Tungsten concentrate refers to the concentrate with a certain proportion of tungsten trioxide produced from tungsten raw ore through gravity separation, flotation, electric separation, magnetic separation and other processes. The sales volume of tungsten concentrate is calculated and determined according to the transaction volume and transaction price of 65% tungsten trioxide." "if a taxpayer processes its mined raw ore into concentrate for sales, it shall be calculated according to the sales volume of concentrate (excluding value-added tax) And the applicable tax rate to calculate and pay resource tax. If a taxpayer mines and sells raw ore, the raw ore sales (excluding value-added tax) shall be converted into concentrate sales to calculate and pay resource tax.



△Manual Separation Process of Traditional Tungsten Ore Development

The calculation formula of tax payable is: tax payable = concentrate sales × Applicable tax rate. "Therefore, we know that no matter the sales of raw tungsten ore or tungsten concentrate, they should be calculated as standard concentrate and pay resource tax.

### **The Third, Tungsten Mine Construction, Mining and Beneficiation Costs**





The construction cost of tungsten mine after the tungsten mining enterprise obtains the mining right is the depreciation cost in the financial report of the mining enterprise. It is an irreversible sunk cost, so its impact on the cost of tungsten concentrate is basically fixed and long-term sustainable; the mining and beneficiation cost of tungsten concentrate is the technical cost reflecting the production technical capacity and management capacity of the mining enterprise, and it also directly affects the enterprise Cost items for profitability.

However, as a rare and non-renewable tungsten resource, can it be compensated only by the tungsten mining right price of 30,000 or 20,000 yuan? If such price is fair, how many listed companies are profitable because of their technical ability and how many are because of their tungsten resources?



△Flotation Workshop of Tungsten Smelting Plant

Therefore, if the mining right price of tungsten resources increases significantly to compensate the government and industrial workers in poor mining areas, what should be the price of tungsten concentrate?

#### **The Fourth, Human Resource Cost, Salary and Welfare Cost of Tungsten Concentrate**

Human resource cost, in addition to the different amount of human resources used due to poor technology and the costs of education, training and management, regional differences, prices and house prices are non controllable human resource costs outside







the laws and regulations, that is, the human resource cost of Xiamen Tungsten with an average price of 30,000-50,000 per square meter is basically higher than that of Jiujiang in Jiangxi and Luoyang in Henan These are determined by the location selected when the enterprise is established and the region where tungsten resources are formed. However, what really has a significant impact on the wages, salaries and welfare of the enterprise's human resources is the minimum wage of human resources designated by the state and local governments at all levels and the legal welfare expenditure calculated and paid based on it. This cost increases year by year and is not controlled by the enterprise's management ability and cannot be exempted Except.

However, do our mine workers and front-line production workers really get their labor pay fairly? Can they really have a sense of security and support for their old age? Imagine that if we pay the same wages to the masters who work hard and diligently to study the production and processing technology of tungsten products and the small and young intermediaries who toss real estate in the city, our tungsten products will be made How much should the cost of goods be?



△Open Pit Tungsten Mine

### **The Fifth, Environmental Protection Cost of Tungsten Concentrate**

The environmental protection expenses of tungsten mines mainly occur in waste water, waste rock, tailings and natural ecological restoration. Ecological restoration is a long-term capital investment process after the depletion of mineral resources and the closure of mines. Jiangxi Province is a large province of tungsten resources in China, and its reserves and output account for nearly half of the country.

We take Jiangxi Provincial Department of finance, Jiangxi Provincial Department of land and resources and Jiangxi Provincial ring office as examples Gan Jian Cai [2008] No. 155







"on printing and distributing the Interim Measures for the administration of deposit for mine environmental governance and ecological restoration in Jiangxi Province" issued by the State Insurance Bureau in 2008 According to the provisions of the measures, based on the environmental protection expenses stipulated in relevant policies issued all over the country in recent years and calculating the average price, it can be roughly calculated that the current environmental protection cost per tungsten concentrate is about 5000 yuan / standard ton, which is a fixed and growing fixed cost. Of course, the environmental protection cost of enterprises using waste recycling materials to produce and process tungsten products should be reduced Will be higher.

However, is our current price increase due to the "negative effect" of the environmental protection supervision team stationed in tungsten mines What will happen after they leave? If our industry has social morality and conscience, and if our enterprises have social responsibility, we need to think deeply. Can a few thousand yuan of environmental protection tax really restore green mountains and green waters to our ripped tungsten mines? If we really want to add the environmental protection cost of tungsten mines to the price of tungsten concentrate, then What should your tungsten concentrate price be?

We simply summarize and analyze the so-called meso cost affecting the cost of tungsten concentrate. Basically, we can see that all factors continue to rise and are difficult to be controlled by enterprises, which is also the supporting reason for the continuous bullish cost of tungsten concentrate by the author of this paper.

In addition to the above conventional cost factors of tungsten concentrate, in the later part of this paper, we hope to analyze the strategic price and future price trend of tungsten concentrate from the national macro strategic level (to be continued: the price of tungsten concentrate is hot and bold. Please see "analysis of price factors of tungsten concentrate as a means of strategic containment and international voice" next Monday)

Annex 1: quality standard document of tungsten concentrate

<http://i.chinatungsten.com/view/44r0t5u3u1az8fk8.html>

Annex 2: legal documents related to tungsten, molybdenum and rare earth tax

<http://i.chinatungsten.com/view/44e9kne749ffyj67.html>





## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

CHINA, 2017

PART III OF X

### Cost & Price Trend of Tungsten Concentrate Analyzed from a Macro Perspective

August 28, 2017

#### Pricing Power, Tungsten Concentrate Price as an International Strategic Containment Means

The industry often says that semiconductors are the food of contemporary industry, rare earth is the MSG of contemporary industry, and cemented carbide, as the back-end product of main tungsten products, is known as the tooth of contemporary industry! Therefore, we can see the importance of tungsten products in contemporary industry, or we can say that tungsten products are an indispensable raw material for a country's contemporary industry to realize the four modernizations and move towards high-end.

As a strategic material, China with the world's largest reserves of tungsten products has absolute advantages in tungsten resources. As tungsten products are closely related to emerging industries and strategic industries such as military industry, nuclear energy, new energy and electronic information industry, China's tungsten resources with reserves advantages and basic smelting and industrial technology should be similar to molybdenum rare earth and other resources should reflect their strategic position and role in China's international political and economic strategy.

#### China's High Price for Economic Take-off

In terms of inter state relations, international strategic theory and time have proved that in order to protect their strategic advantageous position and economic development, developed countries/city guarding countries often adopt economic, political and even military means to delay the development pace of developing countries and strive for the greatest political and economic interests for themselves.

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国家	储量
中国	1,900,000
加拿大	290,000
俄罗斯	250,000
美国	140,000
玻利维亚	53,000
其他	867,000
总计	3,500,000



△Distribution Chart of World Tungsten Reserves, China, Canada, Russia, US, Bolivia, and other countries

### World Mine Production 2007 (Tonnes)



△Proportion of World Tungsten Ore Output in 2007

China has been most affected in the process of reform and opening up in the past 30 years. Due to the long-term implementation of the diplomatic and military development strategy established by Deng Xiaoping and other leaders of the older generation, the diplomatic and military development lags behind the social and economic development. Therefore, the political and military development of the United States and other western countries is relatively small, and the economic strategic offensive reasonably launched by the old western capitalist countries has a great impact.

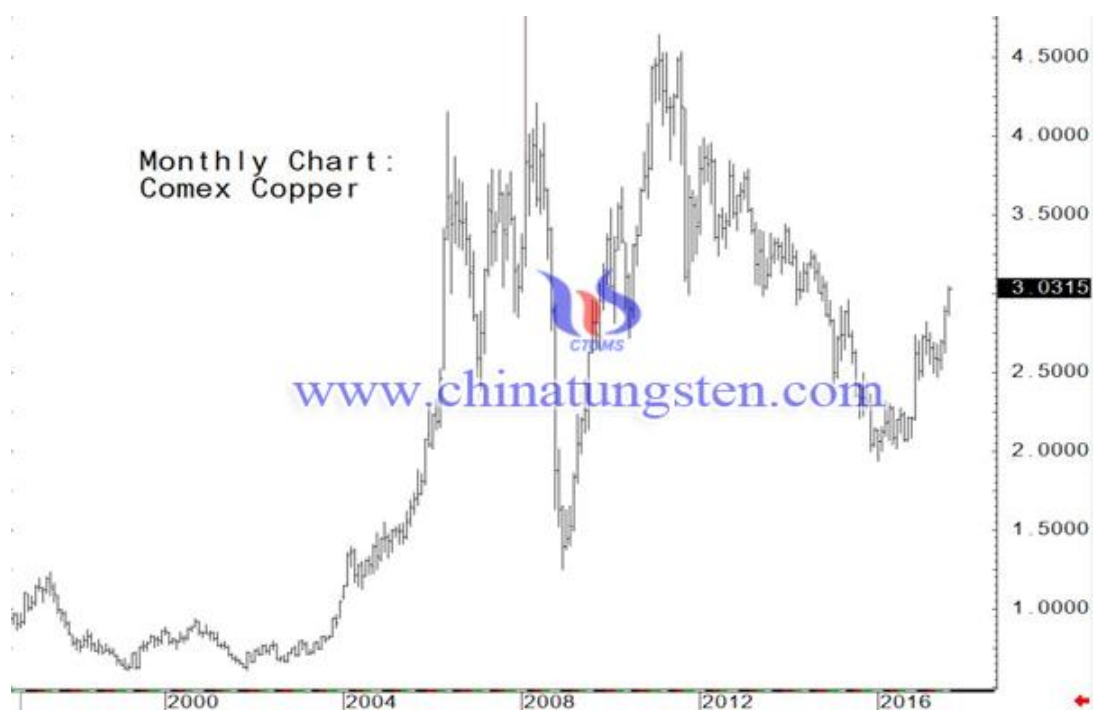
It's empty to say so, but people in the non-ferrous metals industry only need to look back at the prices of main Brown metals and non-ferrous metals raw materials in the past 30





years, especially the prices of raw materials controlled by the west, to know how much China has paid for the western resource price strategy: copper, aluminum, lead, zinc, tin, nickel, iron etc. The prices have increased several times or even ten times one after another. For the sake of oil resources and prices, the West has even launched the Middle East War and the war on terrorism that continues to this day.

Considering that our refueling price has risen from more than RMB1 Yuan to RMB6-7 Yuan a liter, it is very clear what we have paid for economic development. It is in this situation that we have successfully completed the "Railway Infrastructure “铁公基”" (railway, highway and infrastructure) required by the modernization of most countries. Although we have paid a lot of money for this, fortunately, we have basically completed the layout at a lower price.



△In the view of Price of Cu, China has Paid a High Price in the Process of Rapid Economic Developing

### Discourse Power, China should Gradually Control the International Discourse Power of Tungsten Products

Based on the logic that western countries led by the United States control the rapid rise of resource prices and curb China's development in the process of China's development, China has become the second largest economy in the world, and has become an example of the world's largest economy in terms of actual purchasing power and the ability of China's absolute advantage in tungsten resources, We should also use strategic vision and ideas to







design and plan the sales of tungsten resources to the global market. When we sell tungsten resources to the global market, we should appropriately circumvent the relevant WTO rules, adjust the price with tax, environmental protection and other policies, so as to control the construction cost of "iron base" in emerging markets that are catching up and booming, so as to establish and consolidate the position of China's economic development, it also obtains the greatest return for China's tungsten products industry.

Based on this idea, China's relevant administrative departments, industry associations and enterprises in the industry should fully realize that as a strategic material, the value of tungsten products is not only economic, but also political to some extent. Therefore, we should gradually reflect the strategic value of tungsten products on the price of its international market, not only using the national "made in China 2025" And other industrial policies, rapidly improve the industrial upgrading and product technology of tungsten products, reduce the export of low-end and low value-added tungstate, tungsten powder, simple sintered state and other products, gradually occupy the international market with medium and high-end products, at the same time, make use of human cost, environmental protection cost and R & D investment to improve the international market price of tungsten products, and vigorously improve the exploration right and The price of mining right and resource tax will increase the price of tungsten products from the source, so that the strategic value of tungsten products can be reflected in its price.



△Sino US Trade is the Most Important Trade Relationship in the World, Facing Special 301 Clause Test

We can imagine that India and other countries with the same population as China, but only one expressway and no high-speed rail, will have to solve the problem under the condition





of substantial increase in the prices of various resources for infrastructure construction, tungsten products as necessary for Industry and rare earth elements as industrial monosodium glutamate, how high will they have to pay to achieve the infrastructure and industrial construction achievements we have completed?

### **International Voice in the Price of Tungsten**

In the course of China's reform and opening up, the price of iron ore has gone through ups and downs, pushing up the construction and installation cost of our iron infrastructure. The rising house price is a pain for each of us. The reason is that BHP Billiton and other western enterprises control iron ore, copper mine and other resources. They have the right to speak! However, taking Australia as an example, we sold all kinds of minerals at a high price. After making money, we bought fighter submarines, and now we agree with the United States to engage in freedom of navigation in the South China Sea. We seem helpless!

In the development process of tungsten, molybdenum and rare earth industry in our country, we have mine resources. The tungsten products we export to western industrial developed countries are expensive, but they don't do it; If it is sold cheaply, it will be subject to anti-dumping by the EU, the United States and Japan; We don't sell, and they complain to the WTO. We lose, because the rules are made by them and the market is there, so they have the right to speak! Because they set up the WTO and the International Court of justice, why are we so unlucky?

Because we deserve it! We have tungsten resources, but we lack unified strategy and thinking. We just compete with each other to sell products at low prices and grab the market! We have 80% tungsten resources, but the international tungsten association has long been controlled by Westerners. Should we expect him to speak for us? Why? It is not so much that our industry is not competitive, but it is more that we have not realized the strategic position and value of tungsten products in reality and have not won a reasonable voice for ourselves. Otherwise, why did the hard-working miners not make money? The conscientious small and medium-sized enterprises have no export license and export qualification, and are gradually subject to the foreign market, while some Japanese and Taiwan funded enterprises easily and grandly obtained our resources and even the import and export license of tungsten products.

In the past few days, the United States has launched a Special 301 clause to sanction and restrict China in disregard of the relevant dispute settlement mechanism of the WTO; In the past ten days, Japan has followed the United States and unilaterally imposed sanctions on the so-called Chinese enterprises involved in trade with the DPRK despite the huge trade volume between China and Japan; Just over the past two months, India has





unilaterally invaded China's Donglang region in disregard of the basic principles of friendly relations between China and Britain and inter state relations! Australia, which exports iron ore and coal to the Chinese market, threatened to sail freely to the South China Sea with the US military! Indeed, since some countries have broken the basic norms of international trade and the relevant trade principles of the WTO, we can also take the opportunity to change some rules and practices and actively take measures to protect our reasonable and legitimate interests, so that we can make use of our advantageous position and resources in the economic field to play its strategic role.



△India's Economy is Only a Quarter of China's, Rashly Invaded China's Donglang in Disregard of International Relations and These Norms

Through the above analysis, we can clearly realize that at present, when the international political economy is relatively chaotic, it is a favorable opportunity for our tungsten products industry to adjust relevant policies and gradually increase its price. Tungsten products should and must become a strategic industry with strategic status and price, a voice and striving for success!

If the price of main imported raw materials has doubled in our past development process, we can also expect the price of tungsten products to double, triple, or even multiple with the adjustment of national industrial policies and strategies! Please pay attention to the RMB price factor of the price currency of tungsten products in brief analysis of cost composition and price trend of tungsten concentrate (IV).





## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

CHINA, 2017

PART IV OF X

### RMB Price Factor of the Price of Tungsten Products

August 31, 2017

Analysis on the cost composition and trend of tungsten concentrate from the exchange rate of RMB against US dollar

Earlier in this paper, we analyzed the price changes and reasons of tungsten concentrate as the basic material and representative from the three aspects of enterprise micro cost and macro strategic pricing of tungsten concentrate, but these do not seem to be enough to fully form the accelerating power of the current sharp rise in price and integrate all elements of tungsten concentrate price, We find that the exchange rate of RMB relative to the US dollar is also a very important driving factor for the price of tungsten concentrate. As for the relationship between the exchange rate of RMB against the US dollar and the cost and price of tungsten concentrate, we investigate from two aspects: the historical price of tungsten concentrate and the change of the historical exchange rate of RMB, and summarize and analyze the reasonable range of the current price of tungsten concentrate.

It is believed that those who have been engaged in tungsten products industry for a long time may remember that the market price of 65% of wolframite concentrate fluctuated and increased from less than RMB 10,000 Yuan per ton in the mid-1990s to RMB135,000 Yuan / ton in 2004, and then it was in a fluctuating and depressed state until 2013 and 2014 (July) In the quarter of, it was close to RMB 145,000 / MT, and then the bottom limit was lowered again. In 2015 and 2016, it continued until the end of July 2017, and the average price was basically RMB 70,000-RMB80,000 /MT.

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△Trend Chart of Average Price of 65% Wolframite Concentrate in Recent 10 Years

Since August 2017, the price of tungsten concentrate has started the rocket launch mode, rising every day. In the past week, the market price has increased rapidly, and the quotation has changed day by day. On August 30, this paper has increased by RMB 5,000 Yuan compared with yesterday, to RMB 110,000 Yuan per metric ton.

产品	含量	价格	出口价格
黑钨精矿	≥65%	112,000.00 元/吨	
白钨精矿	≥65%	110,000.00 元/吨	
钨铁	≥70%	156,000.00 元/吨	
仲钨酸铵	≥88.5%	170,000.00 元/吨	
钨粉	≥99.7%	255.00 元/千克	
碳化钨粉	≥99.7%	253.00 元/千克	
1# 钨条	≥99.95%	290.00 元/千克	
铈钨青铜	≥99.9%	1,800 元/千克	

△Quotation of Tungsten Concentrate, Tungsten Oxide, Ferro-Tungsten, Tungsten Powder, Tungsten Carbide Powder and Others Tungsten Products of China Tungsten Online on August 30, 2017

The quotation of Chinatungsten online is mainly based on the market quotation, the transaction price of main purchase and sales participants and the expectation of market participants for market trading, and the rational judgment made by integrating many years of market experience and main indicators reflecting the macroeconomic situation, such as GDP, CPI, PMI and other main economic indicators. Therefore, we can think that this quotation reflects the actual situation of the current market, in this view, the price of





tungsten products represented by the price of tungsten concentrate this month has quickly approached the historical high. It can be predicted that under the circumstances that the border conflict between China and India has been successfully resolved, the BRICs Xiamen meeting is about to be successfully held, and major institutions in the world have raised or predicted that China's GDP in 2017 will be higher than 7%, if there is no major macro policy adjustment or the black swan event in the industry, it will be a high probability event for the price of tungsten products to reach a record high in mid and late September 2017.

The price of domestic tungsten products is basically priced and traded in RMB. As a currency that has been initially internationalized, the price of RMB itself has domestic price. Citizens can be divided into monetary price and FOB price; Tungsten products, as one of China's important export products for a long time, are often priced in US dollars in international shopping malls. Therefore, it is necessary to investigate the exchange rate relationship between RMB and US dollars to explore the real value of tungsten products.



△Trend of RMB / US Dollar Exchange Rate in History

Exchange rate is also called exchange rate, that is, the ratio of one country's currency to another country's currency. It is the price of another currency expressed in one currency. The RMB exchange rate is the ratio of RMB to another country's currency. As the main currency of international trade, the US dollar often refers to the so-called exchange rate and the exchange rate of RMB to the US dollar. (the RMB real-time exchange rate can be found in the link <http://finance.sina.com.cn/money/forex/hq/USDCNY.shtml>)

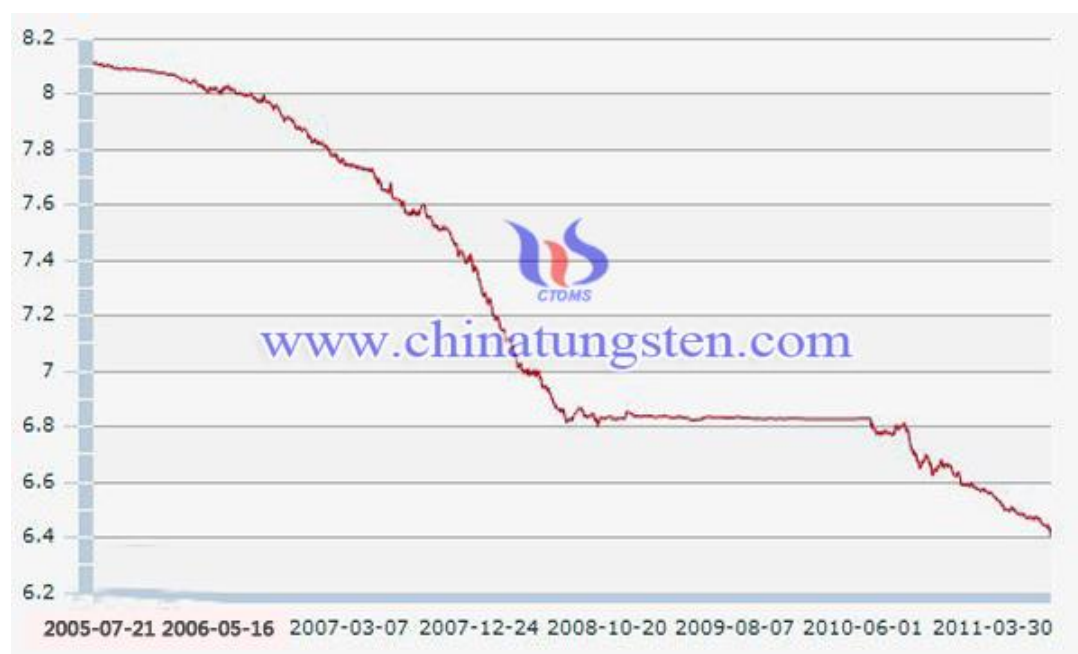




The price of tungsten products in the international market and the price of China's export to international shopping malls are basically priced in US dollars per ton. Taking apt as an example, its price can be marked as USD 270 /MTU. In this way, we can know that in addition to domestic market factors, the international market price of tungsten products is also affected by the RMB exchange rate in addition to export tariffs and freight premiums, It is also related to when the foreign exchange collection enterprise sells foreign exchange and the exchange rate at the time of foreign exchange sales. If the RMB exchange rate is basically stable, the price of tungsten products at home and abroad is also relatively stable under the established quotation principle. When the exchange rate fluctuates greatly, there will be huge differences in the price difference, which will directly affect the price of relevant tungsten products and the income of enterprises.

**MTU: Quantity of tungsten trioxide per metric ton unit, 65%Tungsten Concentrate=65MTU**

The RMB exchange rate has changed greatly from the early days of the founding of the people's Republic of China to 2017. It was a floating exchange rate from 1949 to 1952 and a fixed exchange rate of 2.462 from 1953 to 1971. Since then, it has been using a floating exchange rate. In 1980, when the highest point appeared, the average exchange rate (the average exchange rate of the exchange rate system referred to in this paper) was 1.498, and the highest occurred in 1994, which was 8.6187. From 1994 to 2005, the rate of RMB exchange was basically stable at more than 8.2 and more than 7.0 from 2006 to 2007. After the 2008 financial crisis, the RMB exchange rate rose all the way up to 6.1932 in 2013, 6.64230 in 2016 and 6.5917 on August 31, 2017.



△Change Rate Trend of RMB Exchange Rate from 2005 to 2011





Through the above analysis, we can clearly draw a conclusion that at a given time point, after the product pricing of tungsten products processing and export enterprises, the RMB exchange rate will directly affect the overall income of the industry. The price of tungsten concentrate in 2005 and 2013 reached historical highs respectively. We assumed that the price of tungsten concentrate was RMB 130,000 Yuan / ton. At the same time, we assumed that the export price of tungsten products at this time point was the same, and set the apt export price as USD250 / MTU. Compared with the exchange rate at this time point, we can see the income difference of export enterprises:

年份	美元售价 USD / MTU	汇率	人民币收益		说明
			每吨度	每吨	
2005	250.00	8.2000	2050.00	181425.00	便于计算对比的设定值
2013	250.00	6.1000	1525.00	134963.00	
差异	0	2.1	525.00	46463.00	2013 年与 2005 年相比较
2017	270.00	6.5900	1779.00	157468.00	目前市场平均价格
差异	20.00	1.61	434.00	38409.00	与 2005 年汇率以 270 价格比较
差异	/	-0.49	-132.00	-11682.00	与 2013 年比较以 270 价格比较
假设	270.00	8.20	2214.00	195939.00	

△Influence of RMB Exchange Rate on Domestic Tungsten Products

The above assumptions mean that if our tungsten products export enterprises hope to obtain the same export RMB revenue in 2005, at the current exchange rate, each ton of apt should be sold at the price of RMB 195,939, or should be sold to the international market at the price of USD336 / MTU. (The calculation formula is  $195,939 / 6.59 = 29,732 / 88.5 = 336$ ). The author believes that this is not a wishful thinking fantasy, but a basic reality.

From the above table, we can see that the RMB exchange rate has a great impact on the benefits of tungsten products export enterprises. Even if the apt price rose and maintained the USD270 / MTU price in 2017, the export enterprises still reduced their export earnings by RMB 38409 compared with the export earnings at the USD250 / MTU unit price in 2005. This shows how much the RMB exchange rate has affected tungsten products enterprises in the past ten years. If we take into account the huge impact of the scissors gap formed by the sharp rise in the costs of labor, environmental protection, raw and auxiliary materials and power and the rise of exchange rate on enterprises in the past ten years, it can be imagined that the reduction of enterprise income and this trend have seriously restricted the development of tungsten products industry.

So, China believes that one belt, one road currency, which is gradually internationalized







and China's IMF accession, will be established in China, and it will lead the Asian infrastructure bank and actively promote and promote the construction of the whole area. Any market participants in the tungsten industry will be able to take part in the development of the SDR. Policy makers and other stakeholders must always pay close attention to the factors affecting the RMB exchange rate and its changes. Only in this way can we formulate the correct price, cost and marketing strategy, be invincible in the competitive market, and let our non-renewable strategic resources sell their due value.



△Influence of RMB Exchange Rate on International Importers of Tungsten Products

If the RMB exchange rate directly and greatly affects the income of the domestic tungsten products industry, correspondingly, as a major global supplier of tungsten products, the change of its exchange rate will also directly affect the import price of foreign tungsten products importers. We have taken India, a neighboring country that people pay more attention to recently, as an example to illustrate that we should adopt macro policies to control the export price of tungsten products from a strategic perspective to curb and delay the development and development costs of some countries. As for the impact of exchange rate, we still take India as an example: 1 Indian Rupee = 0.01563 US dollars (1 US dollar = 63.985 Indian Rupees) on August 31, 2017, On August 31, 2017, the RMB against the Indian Rupee was 9.7117. If the exchange rate of the Indian Rupee with the US dollar and the RMB appreciated by the same margin, the cost price of tungsten products imported from China in India would remain basically unchanged. On the contrary, if the direction changed, the import cost would rise significantly.





In this part of the analysis, the author hopes that our participants in the tungsten products industry can pay attention to and analyze the current price fluctuation of tungsten products from a macro perspective, and correctly estimate and judge the possible dollarization of RMB in the future (and the possibility of yen) and its great influence on the industry and market according to the national macroeconomic policies. It's not easy to be original. Thank you for your support. Please pay attention to the next issue of brief analysis of tungsten concentrate cost composition and price trend (V) psychological factors of tungsten product price and the impact of black swan incident





## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

CHINA, 2017

PART V OF X

### Psychological Factors of Tungsten Price & the Influence of Black Swan Incident

September 1, 2017

#### Analysis on psychological factors of tungsten product price

Before this paper, we analyzed the price structure of tungsten concentrate and tungsten products in China and various factors affecting the price. The fourth part focuses on the impact of RMB exchange rate fluctuation on the price of China's exported tungsten products and the significance of raising the weight for the profitability of tungsten products enterprises. However, in fact, in addition to the psychological expectations of mining enterprise operators and market buyers and sellers on the market price of tungsten products, all market behaviors are also deeply affected by some unexpected Black Swan events in the tungsten products market.



△APT's Price from March to August 2017

#### Price psychological expectation of tungsten products buyers and sellers

Price expectation psychology is a judgment of consumers on the change trend and fluctuation level of transaction price in a certain period of time in the future. There are many descriptions of price psychological expectation in management, and no less than





forty or fifty pricing strategies are summarized according to the theory of consumer price psychological expectation. The more famous is the mantissa pricing strategy popular all over the world, which sets the mantissa of the price of goods sold at .99. However, looking at these theories and strategies, they are analyzed from the perspective of studying individual consumers. I believe that the psychological expectation of the market price of tungsten products is the psychological expectation or psychological factor of the procurement of special commodity enterprises and their operators. At the same time, the market price of tungsten products is also deeply affected by the psychological expectation of the supplier as the buyer. Therefore, this paper hopes to analyze the psychological expectations of buyers and sellers of tungsten products for the price of tungsten products, and explore the factors of the rapid rise in the price of tungsten products.



△Typical US Pricing Model, Almost with USD .99 Cent

The price psychological expectation of both buyers and sellers exists all the time. The mastery and analysis of this psychological expectation, especially the psychological expectation analysis and judgment of single to each other, directly determines the basic principles such as our negotiation strategy and pricing bottom line, and almost all price patterns are the result of the psychological quality of both buyers and sellers and their ability to control the rules of the game. Black swan event is an event that may occur at any time and rarely occurs, which can quickly change all other market factors and play a decisive role in the market. Many times, the role of black swan events often depends largely on the role of market participants' psychological expectations and psychological quality.

It's rather vague to say this, but it's easier to understand by giving an example. At present, when the price of tungsten products is climbing to a new high every day, the seller holds the goods for sale and the buyer is anxious to wait and see with money. At present, the psychology of buyers and sellers in the Chinese market is basically the same, that is, to use their controllable resources to obtain the maximum benefits, Or the power to maximize future benefits.







If, there's Mr. Zhang San holds 100 tons of wolframite with a cost of RMB70,000 Yuan per ton in the market, many people come to ask whether to sell it. Today's market price is RMB110,000 Yuan per ton, but Mr. Zhang San thinks or subconsciously hopes that the price of RMB115,000 Yuan per ton will be higher than today's expected income of RMB500,000 Yuan, When the market is bullish, Zhang San needs to make a decision: will he sell and get a profit of RMB500,000 Yuan, or according to the psychological judgment of ordinary people, he will reach RMB125,000 Yuan per ton next week, and he will get an additional profit of 1 million yuan. In many cases, Mr. Zhang San will wait until next week to sell; Mr. Li Si processed wolframite concentrate of RMB115,000 Yuan per ton into tungsten trioxide and handed it to customers who had urged the delivery for many times. However, Mr. Li Si was distressed that the Contract negotiated at the cost of RMB90,000 Yuan had made him start to lose money.

Therefore, he hoped that large demand households would stop production for maintenance and no longer enter raw materials. Many mines would reopen after the environmental protection supervision team left or the large holder of the goods should continue to repay the debts until they are due and have to sell a large amount of tungsten concentrate. In this way, the price will stabilize or even start to fall, so that he will not lose money or even make money. Therefore, Mr. Li Si's decision to make is to buy Zhang San's 100 tons of tungsten concentrate at RMB115,000 tons and lose 1 million, or wait for the market to turn around. However, if the price reaches RMB125,000 next Monday, he will have to buy it to avoid being sued by customers. At that time, he will lose no less than 2 million, but if the price falls back to RMB 100,000 Yuan, he will only lose RMB500,000 Yuan.

This is the test of the psychological expectations and determination of Mr. Zhang San and Mr. Li Si or many people when they confront long and short. At this time, both sides are in tension and anxiety, which is no different from the trading in futures and stock markets. However, there is almost a law in the market. Basically, Mr. Zhang San will make a profit when he sees the good. Mr. Li Si who purchases raw materials at a high price and delivers them in time will also make a profit. Mr. Zhang San who expects a higher price and Mr. Li Si who hopes to buy again at a lower price will often suffer heavy losses. This is the gambler mentality in the market. In addition to the normal factors of the market itself, the tungsten concentrate market is no exception.





△APT's Price Trend since 2016

In such rules of the game, the mentality of stopping when enough is enough and ending when it is good is a sound strategy in line with normal psychological expectations. But these are all rational psychological expectation models and their results based on the state without the influence of black swans or emergencies. The reason why Zhang San and Li Si's psychological expectation of tungsten concentrate price in the game is rational is that there are many uncertain factors among the many factors affecting the price, and only a few market participants can fully understand the influence of each factor and its future change law and obtain accurate calculation, which makes most participants in uncertainty, And the higher the price, the higher the uncertainty. According to the above analysis, we know that the factors affecting the price of tungsten concentrate are basically divided into the following categories:

Firstly, the micro market factors of tungsten products production, supply and marketing, that is, the change of production cost.

成本构成	升降	原因	趋势
钨原矿	上升	整体成本构成上升	不可逆
辅助材料	上升	烧碱、盐酸等随CPI上涨	不确定
人力资源	上升	随全国最低工资水平上升	不可逆
用水和动力能源	上升	供需矛盾	不确定
人民币价格	上升	政治经济因素和外汇储备	不确定
人民币融资成本	上升	政策收紧、房市股市吸纳	短期内不可逆





△Cost Compositions of Tungsten

From the above table, the micro production factors of tungsten products have increased as a whole, so it can be expected that the price of tungsten products will increase compared with the previous period, and will basically not be lower than the original market price.

Secondly, the macro factors affecting the cost of tungsten products.

成本构成	升降	原因
环保	上升	部分不达标矿山因环保等行政原因关停，使开采冶炼成本增加、供应量减少。我国作为巴黎气候协定的主要参与国，且政府以青山绿水救金山银山的理念，环保政策只会收紧，所有企业环保成本只是增加，不会减少。
税收	不变	一定时期内不会大幅调整，但也不存在大幅减税可能性。
人民币价格	上升	由于中国作为世界第二大经济体、作为负责任的大国，在努力推进人类命运共同体、推进一带一路、建设和扩大亚洲基础设施银行、金砖银行、丝路基金等个中前瞻性政策和上世纪 90 年亚洲金融危机和 2008 年世界金融危机中所扮演的负责任的角色来考察，人民币汇率持续波动上升是大概率事件。

△Micro Market Factors of Production, Supply & Marketing of Tungsten, that is, the Change of Production Cost

After analysis, China Tungsten online experts believe that in addition to the above factors, the contradiction between market supply and demand has become a very important factor affecting market prices. The author believes that the current supply and demand is basically in a balanced state, and with the shutdown of some small and medium-sized processing enterprises and the transfer of low-end production capacity to other countries, there may be oversupply of tungsten concentrate and other raw materials. Therefore, in the short term, the market tension is most likely due to the artificial short-term market supply shortage caused by the supply side in order to meet the psychological expectation of profit maximization, and the large participants take market and non market means to deliberately reduce supply and raise prices to achieve their own purpose of profit delivery.

Experts believe that the mood of profit taking and clearing of tungsten resource holders is brewing, and small events may become the so-called black swan event or trigger factor. Therefore, the market risk is gathering and rising, and the possibility of short-term correction is also increasing at the same time. Any form of explicit and implicit selling, the increase and decrease of transaction price of any transaction quantity may have index





significance, and may exert great pressure on the market psychological expectation, resulting in great changes in the market price.

The so-called black swan events, emergencies or various incentives that may trigger market changes will be analyzed in the "brief analysis of tungsten concentrate cost composition and price trend (VI) price fluctuation of tungsten products and the impact of black swan events" next Monday. Please look forward to it.







## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

CHINA, 2017

PART VI OF X

### Black Swan Event of Influencing Factors of Tungsten Price

September 4, 2017

This paper makes a superficial analysis on the production cost, macro strategic pricing, RMB price and psychological factors affecting the tungsten concentrate cost and price, but these are conventional market prediction factors that any tungsten product manufacturer and operator can grasp. Whether an enterprise or a person is successful in the field of tungsten products is often influenced not by these factors, but by the black swan event that goes beyond the logic of the general commercial, political and economic operation law.



△Impact of the Black Swan Incident on International Gold Prices in this Century

### What's Black Swan Incident (Event)

Before the 17th century, Europeans believed that swans were white, but with the





discovery of the first black swan in Australia, just as Copernicus theory overturned people's traditional posture, the previous historical experience completely collapsed. This is the so-called black swan incident. That is, unpredictable major and rare unexpected events may change and subvert everything.



△The Black Swan is Beautiful, But the Black Swan Incident is a Nightmare for Many People

Black Swan Event refers to very unpredictable and unusual events, which usually cause negative reactions or even subversive changes in the market chain. "Black swan" Events generally meet three characteristics: they are unexpected, have a significant impact, and people often make up reasons for them afterwards to prove that they are interpretable and predictable. Black Swan widely exists in social politics, economy and our personal life, and such events may occur at any time, such as the September 11 incident in the United States, the subprime mortgage crisis in the United States, Brexit in the United Kingdom, etc. In the economic field, it also exists in the operation of financial institutions, stock markets and companies. For example, the Bank of Bahrain with a history of more than 200 years fell into a desperate situation in 1993 due to the failure of illegal futures speculation of a 28-year-old young man named Nick Leeson, and finally sold it for \$1; twenty years later, it was "Everbright Oolong" on the morning of August 16, 2013 Within three minutes of the incident, the Shanghai Stock Index soared by more than 5%. After it was confirmed on the same day, the Shanghai stock Index closed down by 0.64%, causing heavy losses to stock market participants.

## Black Swan Event in Nonferrous Metal

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The black swan incident also occurred in the non-ferrous metal industry. In July 1997, Zhuzhou smelter was forced to close its position by Glencore, an internationally famous futures dealer, because Xu Yaodong, manager of its import and export company and futures trader, illegally traded the external futures. The internal assessment loss was 1.322 billion yuan, which almost made this large state-owned enterprise insolvent overnight. If it were not for the national reserve, 200000 tons of zinc would be allocated For external delivery, we may not see the current Zhuzhou smelting group.

### Black Swan Event in Tungsten Industry

Yunnan Fanya Nonferrous Metals Exchange has risen rapidly and expanded and developed rapidly in just four years. It has developed rapidly to ashes in a short time, which is a complete black swan event for tungsten products industry and other nonferrous metals. Pan Asia was once the world's largest exchange of tungsten products and other rare metals. It was established in Kunming, Yunnan in 2011 and expanded rapidly in four years Zhang has attracted more than 200000 investors to invest in its "Rijinbao" Demand financial products.

泛亚报价		银条买提货(委托第三方物流公司发货) 服务费: 50元/件							
品种名称	结算价	最新价	开盘价	最高价	最低价	涨跌	成交量	总成交金额	订货量
白银	644.00	643.00	666.00	666.00	641.00	-5.00	1440	925990.00	51190
电积钴	209.40	208.80	210.00	210.20	208.20	0.00	11660	2442276.00	579910
云锗	1259.00	1258.00	1255.00	1269.00	1254.00	5.00	20550	25878770.00	408240
钨	464.00	465.00	462.00	467.00	460.00	0.00	410490	190274360.00	5610530
硅3303	1161.00	1159.00	1160.00	1163.00	1159.00	-6.00	240	278520.00	0
硅441	1092.00	1092.00	1090.00	1093.00	1090.00	-1.00	280	305500.00	0
硅553	1054.00	1054.00	1052.00	1055.00	1052.00	-1.00	280	294860.00	0
钨条	377.40	377.00	375.60	379.60	371.80	2.20	74360	28072434.00	427720
100克银条	705.45	736.90	707.40	736.90	605.53	70.00	44	31039.86	44
1000克银条	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0
200克银条	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0
500克银条	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0

△Tungsten Bar Quotation of Fanya Nonferrous Metals Exchange on September 3, 2012

In April 2015, the Pan Asian capital chain broke overnight and a cashing crisis broke out, involving RMB43 billion Yuan of funds from investors. The author of this paper has many friends who have invested a large amount of funds or tungsten products resources in Pan Asia, which have not been paid yet. However, the Fanya's judicial process is not completed,







and the nearly 20,000 tons of tungsten products in stock will bring general benefits to the tungsten products industry once they enter the market big impact.

品种	结算	昨结	今开	最高	最低	成交	涨跌	涨幅
钨	622	652	629	639	620	630	-21	-3.23%
锗	2011	2045	2045	2045	1943	1943	-102	-4.99%
仲钨酸铵	240.00	240.60	239.00	240.40	229.60	230.40	-3.00	-1.29%
铋	1605.0	1602.00	1600.00	1612.00	1529.0	1560.0	-42.00	-2.62%
金属铈	1182.0	1159.00	1195.00	1195.00	1123.0	1127.0	9.00	0.81%
电积钴	191.60	194.80	193.20	193.20	191.00	191.00	-12.20	-6.00%
白银	3938	3931	4127	4127	3750	3750	-181	-4.60%
铊	219	215	216	222	215	216	6	2.86%
五氧化二钒	49.70	51.80	53.90	54.30	49.30	51.20	0.40	0.79%
铈锭	62.00	61.70	63.00	63.10	59.00	62.10	1.40	2.31%
钨粉	449.00	472.60	449.00	449.00	449.00	449.00	-20.00	-4.26%
铈	1000.0	1004.00	1000.00	1000.00	1000.0	1000.0	-4.00	-0.40%
氧化铈	1832	1872	1792	1889	1792	1889	-11	-0.58%
氧化铊	4191	4065	4120	4245	4026	4072	-28	-0.68%

△The Quotation of Ammonium Paratungstate (APT) in Fanya Nonferrous Metals Exchange

### Enlightenment of Black Swan Event to Tungsten Market

The concept of black swan tells us that no matter whether any company or manager has accurate technical analysis, sophisticated risk management model, rich management experience and advanced management technology, it may not survive the storm of black swan event. Therefore, at any time, at any point, no matter large or small enterprises and individuals, the tungsten products market is small and relatively closed, industries that can make waves without large funds must be carefully observed, act cautiously, and pay close attention to political and economic events and their significant impact on the tungsten products industry.

### Black Swan Event on September 3, 2017

Just as everyone was wondering whether Kim Jong Un would really launch his claimed missile test to Guam, the DPRK suddenly launched a medium-range missile over the territory passing through Japan to the East. Just when everyone was glad that the United States and Japan had not reacted violently, on the morning of September 3, the DPRK conducted its sixth nuclear test again, which made everyone fall out of their glasses. According to the seismic wave test, its equivalent was far higher than that of Japan in the past, this is a black swan event for the whole world, especially for China, the United States,







Russia, South Korea and Japan. It is a black swan event for India, which has inflated its ambitions, Afghanistan, which has sent more U.S. troops, and Taiwan, which advocates Taiwan independence. How much impact do such events involving political games and military deployment have on the strategic metal tungsten closely related to military Force is what we need to think under the situation of soaring prices at this time.

What is the impact of this standard black swan incident? Let's take a look at what trump, who has always been reckless, said.



△Yes, You Are Right. Trump Said that the United States should Stop Trade with All Countries with Trade Relations with North Korea!





## Possible Black Swan Events in Tungsten Industry in the Near Future

### Major National Reserve and other Policies

In 2008, under the impact of the global financial tsunami, the price of tungsten concentrate has fallen below RMB60,000 Yuan per ton, which has had a serious impact on China's tungsten industry. China Tungsten Industry Association proposed to the national development and Reform Commission to establish a reserve mechanism for tungsten strategic resources for tungsten metals. From the second year, the national and local governments timely collected tungsten resources of different scales when the price of tungsten products was low or strategic needs Storage. In 2009, Ganzhou municipal government took the lead in raising 1.8 billion yuan to launch the collection and storage plan for tungsten products. In the fourth quarter of 2015, the State Reserve Bureau had intended to collect and store RMB58,200 Yuan, but it has failed to meet the standard twice. In the fourth quarter of 2016, the State Reserve Bureau collected and stored about 6000 tons of black-and-white tungsten concentrate at about RMB78,500 Yuan / standard ton and RMB76,500 Yuan / standard ton. At the local level, Chongyi County, Jiangxi Province in November 2016 as an important output town of tungsten concentrate with 150000 tons of tungsten ore reserves, nearly RMB1.5 billion Yuan has been raised to establish a collection and storage mechanism. As of August 15, 2017, nearly 1500 tons of tungsten ore products have been collected, stored and warehoused.

For the tungsten products market, the large-scale collection and storage of the State Reserve Bureau without early warning can not be said to be a complete black swan event, but its impact will have a great impact on the market or the psychological expectations of participants, and can often influence or counter attack the tungsten products market.

### One Belt, One Road for national development and industrial policy.

The policy of One Belt, One Road and the great progress of the country will bring about a great impact on the tungsten industry.

### BRICs Conference on Relations between Countries and International Organizations

The BRICs meeting held in Xiamen from September 3 to 5, together with the ten countries advocating the BRICs + concept this year, if they reach an unprecedented intention or substantive agreement on the BRICs free trade area, it will have a significant impact on China's tariffs exported to India, a big cemented carbide consumer, will bring significant benefits to many medium and low-end cemented carbide processing enterprises.





△Official Logo of 2017 BRICS Leaders' Meeting in Xiamen, where China Tungsten Online located

### **International Political, Economic and Military Events, North Korea Nuclear Crisis**

The North Korean nuclear test on September 3 coincided with the meeting in Xiamen between the leaders of China and Russia, the BRICs' best strategic cooperative partner and the most closely related to the North Korean nuclear crisis. The results of the joint response of the leaders of the two countries will have a significant impact on the world in any case. I believe that the western media who did not sign up for the interview are regretful at the moment.

### **Large Mines and Enterprises Shut Down or Close Down without Warning**

The Ponzi scheme with the gimmick of "Rijinbao" in Yunnan Fanya is still a "Snake Bite" of participants in the tungsten products industry. In addition, environmental protection and production safety accidents in mines, natural disasters caused by force majeure such as typhoons and floods, and major decisions of large enterprises and listed companies such as financing, investment and mortgage guarantee will cause black swan events in the tungsten products industry and may disturb the tungsten products industry at any time.

### **Major Technological Breakthroughs, New Mines and Resources Discovered**

In addition to the invention and improvement of important technologies such as tungsten product processing and production, major technological inventions and applications in





other related industries will also have a positive or negative impact on the market and price of tungsten products. Alternatively, alternative materials for important tungsten products appear, such as cemented carbide alternative materials (nano monolayer materials, graphene, artificial diamond, etc.) , major aerospace technologies have greatly improved the ability of human beings to exploit space and even outer space resources. Recently, China Aerospace Science and Industry Group announced in Wuhan that it has developed the bottom technology of vacuum + maglev high-speed flight train of 4000 kilometers per hour, and is likely to enter the test and implementation stage in the future. Then we have every reason to believe that human beings will realize it in the near future with the development of space resources, we can foresee that many unknown resources may replace tungsten resources.

### **The Real Black Swan Incident is Unclear**

We analyzed and guessed the types of black swan events, but these events are not black swan events. The real black swan events are not clear to the author of this paper! Only each participant of tungsten products can analyze and judge them by himself.







## Author's Words

As far as I know, we have analyzed the cost accounting, cost and price influencing factors of tungsten products from six aspects: micro and macro. The author also puts forward his own views and opinions according to his many years of experience. However, it may be some immature ideas that make industry experts laugh. Because tungsten products are greatly affected by national policies and national macro strategies, so the author hopes to share with you the analysis of the impact of the author's 13th Five-Year plan and the relevant policies of the national intelligent manufacturing, Internet plus, industrial 4 on tungsten products industry.

China Tungsten online WeChat has been recognized and encouraged by everyone. The number of people who pay attention to it has continued to grow in the past few years, which is not only our driving force, but also gives us a lot of pressure. We will work hard to run it well. I hope you will give us more comments and suggestions. Thank you!

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**Appendix: Ten Black Swan Events in 2017 Predicted by Steen Jakobsen, Chief Economist of Shengbao Bank**





## **Ten Black Swan Events in 2017 Predicted** **Steen Jakobsen, Chief Economist of Shengbao Bank**

British Brexit, US President Trump, rebar doubled in a year, copper prices soared by more than 30% in a month, and US stocks hit an all-time high... Although he did not predict that the severity of the North Korean nuclear crisis was so high and India crossed the border, let's look at those black swans that may appear in 2017.

1. China's GDP grew by 8% and the Shanghai Composite Index rose to 5000 points. China is aware that the growth stage of manufacturing industry and infrastructure has ended. Through the implementation of large-scale fiscal stimulus measures and monetary policy and further opening the capital market, China will successfully transition to a consumption driven economic growth model. Its GDP growth is expected to exceed the current expectation by 8% in 2017. Private consumption the rising consumer sentiment has driven economic growth. The Shanghai Composite Index doubled from the low point in 2016 to break through the high point of 5000.

2. The desperate Federal Reserve followed the pace of the Bank of Japan and fixed the yield of 10-year Treasury bonds at 1.5%. With the dollar and U.S. interest rates rising in a more painful way in 2017, the newly elected president's large-scale fiscal measures will lead to a surge in the yield of U.S. 10-year Treasury bonds to 3%, causing market panic. On the brink of crisis, the Federal Reserve will be forced to get involved and put the 10-year Treasury bonds on the verge of crisis The bond yield is fixed at 1.5%. This is equivalent to replicating the practice of the Bank of Japan in controlling the yield curve, but the control angle is different. In fact, this is the implementation of the fourth round of QE, which is known as unlimited QE. This move of the Federal Reserve will quickly stop the sell-off in the global stock and bond markets, and then make the bond market record its highest rise in seven years. Criticism Submerged in a new round of rebound wave set off by the central bank.

3. The default rate of high-yield bonds exceeds 25%. The long-term average default rate of high-yield bonds is 3.77%. In those years of U.S. economic recession, this data rose to 16%, 10% and 12% respectively in 1990, 2000 and 2009. However, by 2017, the default rate may be as high as 25%. Central bank intervention is about to run out, and governments around the world are turning to fiscal stimulus, Interest rates of central banks around the world will rise further (except Japan) This means that the yield curve will be sharply steeper, and trillions of corporate bonds are in danger, and this problem will become more and more serious with the rotation of bond funds, the expanded interest margin and the





difficulty of refinancing low-grade bonds. As the default rate reaches 25%, those inefficient and unproductive enterprises will be eliminated, and the capital will be reallocated to those enterprises that deserve it.

4. Britain will stay in the EU and Brexit will not happen. The rise of global populism makes EU leaders take a more cooperative position on the UK issue. With the progress of negotiations, the EU has made key concessions on the "passport access" system for immigrants and British financial services companies to enter the EU. The Lisbon treaty Article 50 was triggered and submitted to the British Parliament, but was rejected to support the new agreement. Britain remained on the track of the European Union, the Bank of England raised interest rates to 0.5%, and the euro fell to 0.7300 against Sterling - the level when Britain entered the European Economic Community in 1973.

5. "Copper doctor" Caught a cold. After the U.S. election, copper is obviously one of the winners of commodity futures. After entering 2017, the market will begin to realize that the new president will be difficult to fulfill his commitment to increase investment, and the previous expectation that copper demand will increase has not been realized. In the face of increasing domestic discontent, he will push up trade protectionism and raise trade barriers, thereby giving rise to emerging markets And Europe. Global economic growth will begin to slow down, and China's demand for industrial metals will weaken as the driving force of its economic growth turns to consumption. Once the copper price falls below the trend line support and falls to \$2 / pound in 2002, the door to further decline will open, and waves of speculative selling will depress the copper price to fall to 2009 The low point of the financial crisis is \$1.25/lb.

6. Bitcoin rose strongly due to the rise of cryptocurrency. The trump administration will increase fiscal expenditure, and the US budget deficit may triple from the current approximately \$600 billion to \$1.2 trillion to \$1.8 trillion. This will lead to the rapid rise of U.S. economic growth and inflation, force the Federal Reserve to accelerate the pace of interest rate hike and promote the sharp appreciation of the dollar. Then it triggered the domino effect in emerging markets, especially China. People began to look for an alternative form of legal tender and payment system that is not affected by the US dollar and US monetary policy. Cryptocurrency has attracted attention, and bitcoin will benefit from it. If the banking system and sovereign countries, such as Russia and China, accept bitcoin as a partial substitute for the dollar, traditional banking and payment system, bitcoin is expected to triple next year, rising from the current level of \$700 to above \$2100.

7. American health care reform has triggered industry panic. The U.S. health care expenditure accounts for about 17% of GDP, while the world average is 10%. An increasing proportion of the U.S. population cannot afford medical expenses. After Trump's victory in





the general election, health care stocks rose sharply, but this wave of gains will subside rapidly in 2017, because investors realize that the trump government will not treat the health care system gently, but launch comprehensive reform of the low productivity and expensive U.S. health care system. SPDR tracks that the selected health insurance Stock Index ETF (XLV) will plunge 50% to \$35, ending the most spectacular bull market in the U.S. stock market since the financial crisis.

8. Despite Trump's victory, the Mexican Peso will soar, especially against the Canadian dollar. The market has greatly overestimated Trump's ability and willingness to suppress trade with Mexico, which will significantly increase the Mexican peso, which has plummeted previously. At the same time, Canada is suffering from a credit crunch in the housing market caused by rising interest rates. The exhaustion of Canadian banks prompted the Bank of Canada to start quantitative easing and inject funds into the financial system. In addition, the Canadian dollar performed poorly because the foundation of Canada's manufacturing industry has been hollowing out for a long time under the background of globalization and transformation and too strong local currency for many years, resulting in that Canada's growth recovery momentum can not catch up with the United States as in the past. The Canadian dollar has revised 30% against the Mexican Peso since its high in 2016.

9. Italian bank shares became the best performing equity asset. German banks have fallen into a vicious circle because they are severely suppressed by negative interest rates and the yield curve is too smooth to obtain additional capital from the market. Within the framework of the European Union, a German bank in trouble undoubtedly needs to be rescued by European banks, rather than Italian banks falling into trouble prematurely. The new guarantee scheme made it possible to recapitalize the banking system. The European bad debt Bank (ebdb) was established to clean up the balance sheet of EU banking industry and help the bank credit mechanism run again. Italian banks rose 100%.

10. The EU stimulates economic growth by issuing common eurozone bonds. In the face of the rise of populist parties in Europe and the possibility that the far right party led by Gilt Wilders may dramatically win the Dutch election next year, traditional parties began to abandon the austerity plan and tend to return to the Keynesian policy pursued by President Roosevelt after the 1929 crisis. With the support of Euro president Juncker, the EU launched a six-year 630 billion euro stimulus plan. In order to avoid being diluted by import growth, EU leaders announced the issuance of large-scale euro zone common bonds. First, the project is aimed at the infrastructure project worth 1 trillion euros. The project is conducive to strengthening the economic integration of the euro zone and attracting a large amount of capital inflows from investors who regain confidence in the future of the EU.







## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

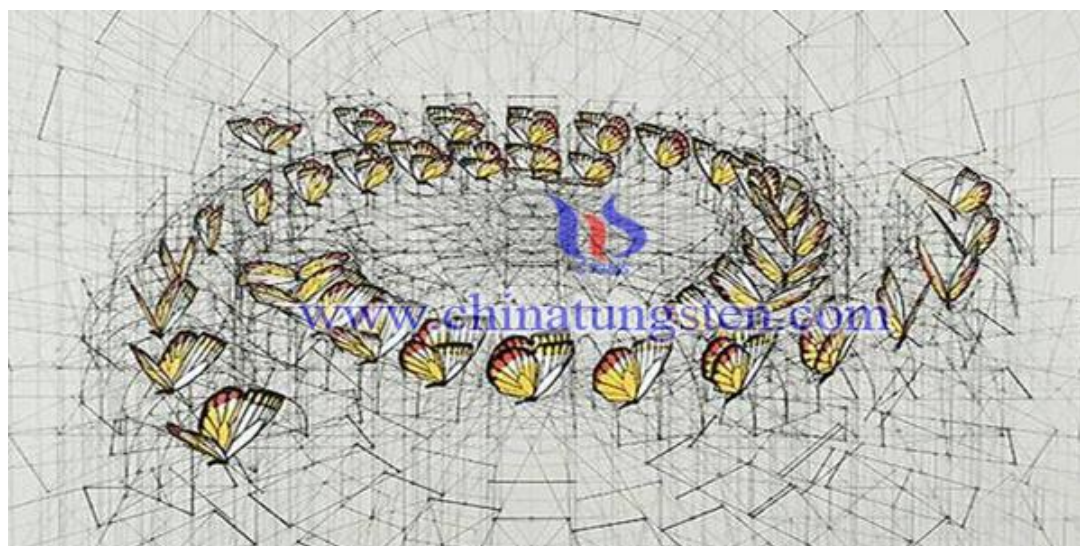
CHINA, 2017

PART VII OF X

### Analysis of Butterfly & Resonance Effects

September 6, 2017

As mentioned in this article, the so-called brick family has read a lot of nonsense about all kinds of tungsten concentrate. It has to be because people are also black and involve the crazy Black Swan incident. In fact, people's black swan is beautiful. What does it have to do with it!



△The Butterfly Effect

At present, the production and operation decision-making of tungsten products is such a situation, which is very simple: (1) you have goods, do you want to sell them? The world is so big, you really should make some money to see; (2) you have orders, do you want to buy materials, and other guests queue up?

To tell the truth, the problem faced by all business decisions in the tungsten products industry is that there are three possibilities for the price of tungsten products: rise, fall and balance. The corresponding decision should be to buy, sell and wait and see. Based on

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this, we use the butterfly effect and resonance theory to analyze the decision logic of the current tungsten products industry.

### **The First Situation: the price of tungsten will continue to rise for a long time.**

I believe people in the industry know that the current price of tungsten products has reached a high point in recent years. Although it seems to rise rapidly, it seems to be the end of a strong crossbow. More importantly, many downstream manufacturers have been difficult to maintain. Whether they support long-term orders on hand or currently receive orders, it is difficult for customers to accept changing the established price or accepting the same products in the short term. The reason is very simple. When the price of tungsten concentrate rises sharply by more than 40% in a short time, no end customer can accept such a sharp rise in cost, both in terms of gross profit and psychology. Therefore, such a rise is difficult to continue in the economic law and actual operation. Therefore, if you are a seller, the rational choice at this time should be to take profits and keep profits. The profit-making part under the existing price market; as a buyer, the reasonable choice should be to negotiate with the customer to postpone the delivery or make the minimum raw material reserve to maintain production under the condition of necessity, and negotiate with the customer to deliver in batches to wait and see the change, so as not to fall into the embarrassing situation of buying high and selling low.

### **The Second Situation: the price of tungsten products may fall in the short term.**

According to pure mathematical theory, there are at least three possibilities. But in fact, in addition to the existing shocks and fluctuations in the market, psychological factors will play a great role in determining whether the price falls. That is, after the price rises rapidly, the probability may not be less than 50%. This psychological factor may be due to an accidental event, an individual merchant's more than 20 tons of tungsten. The profit-making sale of the mine may also be due to an inadvertent phone call or an insignificant WeChat! In this article, we try to explain and explain it with butterfly effect and resonance effect.

As we all know, the story of a butterfly flapping its wings in Brazil that may cause a tornado in Texas is the so-called "Butterfly Effect" put forward by American Lorenz in a speech. In other words, a gambler lost tens of thousands of yuan last night and threw out a ton of tungsten concentrate much lower than the market price in the morning, which may lead to a drop in the price within a day, because the low price of this ton may be incitement. A butterfly with wings. When the gambler sits on the gambling table at night, his inventory value may have shrunk significantly. Or, a brother is drunk because of the sharp rise in the value of tungsten concentrate, and then makes a joke to his friend and





makes an unreliable phone call, which will have the same effect.



△Bridge Collapse

Of course, this is just the fantasy of gamblers and drunkards. You don't have to care! A small individual tungsten concentrate dealer selling a few tons of goods at a low price will have no impact on the market at all. But if dozens or hundreds of brothers in the industry happened to lose last night? You don't have to care. This won't happen. Even if it happens, it will only account for a small part of the market! but if we use resonance effect to explain this imagination, we will get the opposite result.

A large group of students with cold hands and feet stamped their feet in the corridor to keep warm after class. As a result, a building collapsed! This is not a white fairy tale in winter, nor an earthquake, nor a car earthquake, but an example of real resonance effect. The so-called resonance effect refers to the superposition of two or more substances, and their own vibration frequency. If they happen to form resonance, the superposition of vibration amplitudes between them will produce huge energy and destructive force. For example, buildings and bridges, if the wind blows through the building and the vibration frequency of the building is the same as that of the wind, they will produce resonance, the building is dangerous, and so is the bridge. If the vibration frequency of the bridge is the same as that of the object passing through the bridge deck. If the vibration frequency of the bridge is the same, or the vibration frequency of the bridge is the same as that of the wind, the bridge will collapse. This is why we see that when the marching team passes through the bridge deck, they all walk rather than walk together. Different objects have different vibration frequencies. The same theory is also applicable to explain market psychology





and behavior, so we should pay attention to the heavy hands suddenly killed by large market players, we should also pay attention to the wind and grass of retail investors, because that may be the precursor of resonance effect, or the straw that crushed the camel.

If you don't believe it, please think about how the price rises rapidly: some people in the market sell a few tons of goods higher than the average price. Although the quantity is small, it has become a reference for the market price. Therefore, everyone hurried like crucian carp across the river and followed up one after another. Therefore, all the reasons can be used to explain the rise, so the sesame seeds of the price bloom It's over!



**The Third, what kind of situation: the price of tungsten products remains unchanged at a high level. You don't buy or sell, so forget it!**

The above is pure nonsense. If there are similarities, it is pure fiction. Those who make money don't have to treat. They lose their destiny! Welfare release: a piece about the crooked nut of the butterfly effect:

- Lost a nail and broke a shoe;
- Broke a shoe and broke a war horse;
- Broke a war horse and wounded a knight;
- Wounded a knight and lost a battle;
- Lost a battle and lost an empire!







## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

CHINA, 2017

PART IIX OF X

### Business Strategy & Determination of China Tungsten Industry

September 7, 2017

The seven articles mentioned in this article have made a mess of the current tungsten product market. Some were praised by everyone yesterday, and some were gently patted. This gives China Tungsten online brick family confidence. While thanking you for your attention, it also feels that it is necessary to write out the unspoken words to repay your attention and care.

项目	6月26日	9月06日	增长率	对成本的影响
一级Ⅱ类黑钨精矿价格	82,0000/吨	120,000/吨	46.34%	增加成本
美元兑人民币汇率	6.8440	6.5268	-4.86%	减少收入
合计结果	N/A	N/A	51.20%	综合损失

△Influence of Tungsten Concentrate Price and RMB Exchange Rate on Enterprise Cost

At the moment of the high price of tungsten products, the impact of the foreign trade business environment of the recent sharp decline of the US dollar and the rapid appreciation of the RMB in the short term is superimposed. Most of the domestic tungsten products industry is facing a complex non utilization environment. Tungsten chemical manufacturers with long export orders and tungsten concentrate as raw materials are even worse. Based on the exchange rate of 6.8440 on June 26, the recent highest point of the U.S. dollar, and the price of wolframite concentrate on that day was 82000 yuan / standard ton, we investigated the significant impact of this price rise on the manufacturers of tungsten products mainly engaged in the export of tungsten products.

Based on the above analysis, if the cost of tungsten concentrate accounts for 70% of the production cost of a company, its cost will increase by at least 36%. I believe all people in the industry will believe that no company with intermediate tungsten products as the main product can make more than 36% profit, that is, this price increase plus RMB





appreciation makes almost all downstream manufacturers of tungsten concentrate fall into a state of loss.

We can say that this situation is unacceptable and difficult for the industry to continue, because it will seriously damage the development of the industry. The enterprises in it can only choose to temporarily terminate the procurement, slow down the transaction and watch the market change and trend. In this way, the high-level operation of tungsten market can not be maintained for a long time.

In the face of such a situation, many people in the tungsten products industry are flustered, and even lose their direction for a time, or simply choose to quit. Of course, this is in line with natural selection. The survival of the fittest is like the natural law, but what should people who stay for the sake of China's tungsten industry do? I think we should consider our medium and long-term strategies from several aspects:



#### △Business Strategy Make Policy

(1) Maintain a good attitude in the present time, maintain a sustained strategic determination, and set a firm macroeconomic strategy based on the fundamental policy of the country, such as the 13th Five-Year plan, intelligent manufacturing, Internet plus, and industrial 4, to identify their positions and to develop their strengths.

(2) Closely integrating Internet plus era, studying artificial intelligence and intelligent manufacturing, studying 3D printing and mold manufacturing technology to improve tungsten and molybdenum products molding technology.

(3) Avoid impetuous mentality, carefully study the production and processing technology of tungsten products at all levels, promote product upgrading, formulate relevant industrial policies from the perspective of industry management and national strategy, gradually reduce the export supply of primary products, promote the export of precision





processed high accessory value products and international market expansion, and coordinate industrial development, Make contributions to China's strategic development and strategic material reserves, and train a pair of good "teeth" for China's industrial upgrading and intelligent manufacturing experience. The following part of this paper attempts to make a superficial analysis on these aspects.

On the other hand, according to the main development objectives of China's 13th five year plan, the author interprets the combination point of tungsten products industry and the national 13th five year plan for your reference. Fool, please forgive me for what is wrong.



△The Internet Age

**Attached:**

[Interpretation from the perspective of tungsten and molybdenum in the 13th five-year plan of 2017](#)

附件: [2017 十三五计划钨钼视角解读](#)





## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

CHINA, 2017

PART IX OF X

### Internet Plus Tungsten Industry's Subversive Thinking

September 8, 2017

Yesterday, I shared with you the project analysis of China's "13th five-year plan" manufacturing industry's urgent demand for tungsten and molybdenum products industry compiled by the team of China Tungsten online. The tungsten and molybdenum industry is in the "13th five year plan" in China Under the macro planning, we should determine the correct strategic direction and maintain lasting concentration and profitability, and we suggest that the tungsten and molybdenum products industry should really calm down and think about why our industry has created the ups and downs of the current market, and why we have huge resource advantages, but often do loss trading.

I have had the honor to visit some different types of tungsten products processing enterprises in China, and I am very grateful to many friends in the industry for giving me the opportunity to understand their enterprise profile. My overall feeling is that most tungsten products enterprises are still in the state at the beginning of this century. In terms of hardware, either the production and processing capacity, technology and equipment of enterprises are relatively backward and old. To be honest, some technologies or are still the level of the 1970s; in terms of software, either our enterprise operation and management thinking and ability are still in the old state-owned enterprise thinking, or we kill the goose to lay the egg. If you look at our human resource quality and education and training investment, look at our plant equipment operation management, and look at our low-cost routine in business, you will know what the author said and understand it It's not alarmist. If you think I'm talking nonsense, turn around and look at the development level of other industries, or go to the exhibition to see what our domestic enterprises are thinking and buying, and what western manufacturers are saying and buying, you know that we have to admit that we are still at the low end of the industry and still living by selling our ancestral products at a low price.

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△Mainstream Social Media in China

We hope that our friends in the tungsten products industry will base themselves on their own business, deeply cultivate their business, and think about whether we should change our thinking. Our suggestions are:

- (a) Pay attention to the changes brought by the development of information industry technology, and pay attention to the development of intelligent manufacturing, AI and AR technology;
- (b) make full use of Internet plus, industrial 4.0, 3D printing technology;
- (c) Actively embrace social media, open self closed barriers, exchange technologies and resources among tungsten products industries, and make use of their respective advantages and advantages

Ability, learn from the idea of sharing economy, learn from each other and support each other, so as to contribute to the future development, strength and expansion of tungsten products industry and our own enterprises.





△Internet Strategic Layout

The following part of this article, including the attachment, is the conference exchange article "Internet + China Tungsten Industry New Thinking" submitted by the author when attending the China Tungsten Industry Association meeting in Beijing on December 28, 2015. It still has its value after reading it, so I put it here for your reference, please forgive me if it becomes obsolete due to the development of IT technology and applications.

Internet plus China's new thinking on Tungsten Industry:

<http://news.chinatungsten.com/word/Internet.pdf>

The following is an excerpt from the article:

### **A. Internet Plus (+)**

Internet plus should contain at least two levels of meaning, namely, the application of Internet thinking and Internet thinking. A simple understanding of Internet plus is the traditional enterprise + Internet, or even misinterpreted as an enterprise + website, which has completed the transformation of traditional enterprises into Internet or e-commerce enterprises. This is superficial and one-sided. If there is more or less relationship between the Internet and the Internet, it is interconnection. The description of physical entities by virtual language of network, but this is not equal to the fact that enterprises already possess the essence or attribute of Internet plus. This is the reason why the concept of Internet plus was first proposed by the state from the government level and the reason for





its efforts.

Many enterprises are intoxicated by the Internet, which is still simple or electronic description of the business content. The simple way to upload the traditional files, forms and catalogues to the Internet is the transformation from the physical to electronic, and the porting from the Canton Fair to the network. Internet has not yet been realized, let alone Internet plus.

## **B. China's Tungsten Industry + Internet Plus**

Over the years, there has been no revolutionary change in the tungsten industry, except for the change of resource control and the emergence of several listed companies. There has been no fundamental change in the production, consumption and sales pattern and management system of tungsten. In addition to narrowing the gap with the West in equipment capacity, revolutionary production and management technology has not emerged. The tungsten industry not only fights separately in the industry, but also with other industries. There is little integration and cross-border integration in the industry. Due to the precision processing technology of high-end products, most products are still concentrated in the primary processing with low added value. The ratio of tens of thousands of tons of chemical exports to value every year is enough to explain the problem, while high-performance and value-added products, such as cutting tools, molds and alloy products, are still limited to the middle and low end, which is a long-standing problem in the field of materials in China. The price of tungsten products has been in the doldrums for years. It is enough to explain obviously the short board in the tungsten industry. With internet plus, we can expect that the industry integration of the tungsten industry will accelerate, and the new industry integration and reconstruction will change the ecological pattern of tungsten production and consumption.

We are pleased to find that there are already several dozen years of deep e-commerce in the field of e-commerce, and are familiar with the industrial chain and derivatives of tungsten products, and have a deep understanding of the long tail market of tungsten products industry. At the same time, they have rich experience in network information integration and international trade, and have established a successful mode of survival and development for the tungsten industry's e-commerce management in the global industry, and built Internet plus for us. The model has laid a solid foundation; some production enterprises have already made a gratifying step on the road of the Internet, and have gradually moved towards networking in the fields of procurement, sales, production, operation and management, and initially have the Internet plus mode.

Internet plus China's tungsten industry has been missed. We have missed the climax of the





Internet, and no web site or platform has been born. But the advantage of the Internet lies in Moore's law, because its technology and application are rapidly updated. We can leap over to the world without having to start over. We have missed the Internet but can't miss the Internet plus. Otherwise, we will always miss the opportunity for China's tungsten industry to develop by leaps and bounds, catch up with the tungsten products industry of western developed industrial countries, and even surpass and even lead the world tungsten industry with the help of resource advantages, Internet and consumer market advantages!

In China, Internet plus leadership rendered ineffectual by recalcitrant subordinates. We must keep pace with the pace of China's Internet + era. There are still many problems to be faced and solved. In the industry, some enterprises are too small to meet the change of consumption demand. Some enterprises have scale but are unable to meet the needs of the market. The main reason is that there is no overall Internet thinking and strategic layout. These problems are concentrated on horizontal connection among the production capacity. Lack of tension, vertical links are not attractive, lack of integration between elements, lack of international vision in operation and management. All these problems need to be emphasized and solved in the process of Internet plus.

### C. China Tungsten Industry Internet Plus Outlook

I believe that the tungsten industry should earnestly pay attention to the learning of Internet technology and application, pay attention to the cultivation and construction of Internet talents and teams, and implant Internet thinking in all elements of operation management and supply chain such as technology research, production, storage and transportation, sales and service with the help of the advantages of the Internet. Only in this way can we really give full play to China's tungsten resource advantages and transform the resource advantages into industries. The advantages enable China's tungsten industry to become the "sharp tooth" of China's industry 4.0.

For this reason, it is recommended that the Chinese tungsten industry take the China Tungsten Industry Association as the center, create an e-commerce branch of the China Tungsten Association or an industry-academy research institution, and jointly explore the Internet + road of China's tungsten industry; and cooperate with smelting, machining, and infrastructure construction. , Equipment, aerospace, military industry and other industries cooperate to try the industry integration and cross-industry integration of my country's tungsten industry, and make due contributions to the revitalization of the tungsten industry, the realization of China's intelligent manufacturing, and the realization of the dream of rejuvenation of the Chinese nation.







Under the leadership of China Tungsten Association, an information and logistics platform will be built based on the website of China Tungsten association to realize multi-functional platforms such as information and price convergence and exchange, sales and exchange of raw materials and products, replacement and leasing of production technology and capacity; member units, academia and scientific and technological circles will be organized to exchange and share production, learning and research. Contact Internet talents inside and outside the industry and make full use of the wide range of contacts of tungsten Association Extensive advantages Internet plus internal and external resources, specialized interest, ability and complementarity of enterprise organizations specialized docking for production, marketing and technology exchange, and in the exchange, make the production, trade, Internet, Internet of things and other superior enterprises and traditional capacity to communicate with each other, to merge or integrate. With platform to provide more value-added services, such as Internet + skills training, personnel recruitment, production. Product design, equipment introduction, technology transformation, capacity exchange and replacement, etc., to create a platform for the Internet plus mode of the tungsten industry, from the original single information platform to a comprehensive platform with comprehensive capabilities, and provide third party services for all sectors of the industry, such as big data, cloud computing system, business platform, O2O service providers, tungsten products special design and management software, etc. .

#### **D. Subvert the Traditional Production Consumption (Production Consumption) Model**

After China's economy entered the new normal, traditional and excess capacity spilled out rapidly, and its flow was transferred to developing or sub developing countries and regions due to factors such as manpower, environmental protection costs and production technology capacity. On the other hand, some high-end production "smart" With the wide application of robots and the maturity of 3D printing technology, the production of China's tungsten industry will upgrade to fine processing and meet personalized needs. China's tungsten industry may reduce the export of raw materials and primary products, increase the import of raw materials and semi-finished products, and shift the production of domestic tungsten final consumer goods from chemical products At the same time, due to the increase in the iterative renewal rate of the consumption market of new high-end tungsten products such as it industry, new energy and intelligent buildings, and the improvement of the degree of demand personalization, B2B and B2C under the original Internet mode will transition to the connection between highly personalized market demand and production, which requires The Internet plus Internet plus cross industry mode of production and consumption is needed. The mode of rapid production and delivery of personalized and customized demand will overturn the existing large-scale





standard change production. This is the survival rule of the Internet plus mode and the proper meaning of Internet +. Ignoring the traditional thinking of Internet + subversive ability and sticking to the scale and winning will be ruthlessly eliminated by the market.

### **E. Capacity and Internet Industry Integration**

With the deepening of the Internet knowledge and the rise of Internet plus centric mobile Internet, the traditional capacity and Internet companies in the tungsten industry will accelerate the pace of integration to solve the problem of the backward and excess capacity that has plagued the tungsten industry for many years, and the imbalance of advanced capacity and equipment. In the process of transferring the Internet from the PC era to the mobile Internet, the advanced capacity will be gradually increased. The exchange, exchange and short-term transfer or lease of property rights and use rights have emerged, which makes the industry unite horizontally and develop in depth; the boundaries of traditional production and processing enterprises, R & D and design enterprises and sales enterprises are gradually blurred, and move towards deep combination and merger, that is, the advanced production capacity and equipment of production-oriented enterprises will serve the design and sales enterprises according to the market demand, and the inventory of production-oriented enterprises It will become a commodity for sale on the e-commerce enterprise platform, and the e-commerce platform will realize some or all of the sales functions of any cooperative enterprise, and even become its remote or even offshore sales department. This new production and marketing mode will not only be the B2B and B2C mode of traditional e-commerce, but also become a completely closed and seamless supply chain for design, production, sales and logistics to realize the tungsten industry The real meaning of Internet plus.

### **F. Internet Plus Enterprise Rise Counter Attack**

Internet plus concept, a newly established enterprise with 4 gene, will attack the traditional tungsten products enterprises, initiate, participate or directly merge and integrate traditional capacity, and quickly annex traditional enterprise market, and become a representative of new enterprises in tungsten industry.

The Internet plus tungsten industry can absorb and converge market demand at low cost, change the control of production capacity, change from centralized control to decentralized enhanced control mode, and establish intelligent, highly flexible personalization and digital production and elimination mode, eliminate the production and elimination boundary that has been confined to tungsten industry for many years, innovate the field and form of tungsten products consumption, and innovate and restructure the industrial chain, supply chain and price. Value chain. These enterprises are





making full use of information technology (it) and cyberspace virtual system - Information physical system (cyber physical system) to realize global network sales, integrated intelligent design and intelligent production and processing in line with the concept of industry 4.0; to realize remote design, multi-element participation, electronic simulation production experiment and cost test with full integration of mobile intelligent Internet of things and logistics network, allowing customers to participate in and control production and inspection, production consumer interaction, man-machine interaction and An emerging tungsten industry with precise collaborative manufacturing and efficient service matching.





## THE PRICE COMPOSITION & RISING FACTORS OF TUGNSTEN

### CHINA, 2017

### PART X OF X

#### An Ongoing Topic: Price Rising Factors of Tungsten

September 11, 2017

In view of the recent rapid rise of tungsten products, China Tungsten online launched an analysis article on the price fluctuation of tungsten products according to its understanding of the tungsten products market and many years of industry experience, and published it on "China Tungsten online" WeChat and China Tungsten online news website to share with you and get your criticism and correction. Today's article is the tenth and last in this series. We hope to make some summary through this article and make some preliminary reflection on the development and characteristics of tungsten products industry in order to resonate.

#### 环保督查各批次范围

批次	地区	批次	地区	批次	地区	批次	地区
第一批 (2016/7/12 - 2016/8/19)	内蒙古	第二批 (2016/11/24 - 2016/12/30)	北京	第三批 (2017/4/24 - 2017/5/28)	天津	第四批 (2017/8/7 - )	吉林
	黑龙江		上海		山西		浙江
	江苏		湖北		辽宁		山东
	江西		广东		安徽		海南
	河南		重庆		福建		四川
	广西		陕西		湖南		西藏
	云南		甘肃		贵州		青海
	宁夏						新疆

资料来源: 环保部, 北极星, 中金公司研究部

△Batch Arrangement of China Environmental Protection Inspectors

The reason for the rapid rise in the price of tungsten products in a short time is relatively clear and certain because of China's recent environmental supervision.

On August 29, 2017, Xinhua Net reported on the most severe environmental protection supervision and law enforcement in China's recent history under the title "why does this







great supervision cover the whole country make local people frightened?". It is reported that from August 15 to 24, the fourth batch of central environmental protection supervision teams stationed in 8 provinces and autonomous regions, and a total of 13826 reports were handed over to the masses; 2115 cases were filed and punished in relevant regions, with a penalty amount of 94.4924 million yuan; 122 cases were filed for investigation and 146 people were detained; 1113 people were interviewed and 1797 were held accountable.

This environmental protection supervision is mainly aimed at ferrous metal smelting and other industries, but it also has a huge impact on the tungsten products industry. Its appearance is the environmental protection war, but in fact, the economic war of industrial upgrading, that is, the environmental protection policy is used to force the industrial upgrading of all walks of life. A large-scale environmental protection inspection has shaken China's tungsten products industry, which is enough to show that many tungsten products production and processing enterprises, especially the raw material end, have not strictly carried out self-discipline in accordance with relevant national environmental protection regulations and failed to meet environmental protection requirements, which at least explains two problems:

(1) Our current price of tungsten products does not fully reflect its due environmental protection cost. Our enterprise has not fulfilled its due obligations as a social citizen, nor has it fulfilled its due social responsibility and social ethics, nor has it passed the ISO14000 environmental management system, nor has it reached the minimum environmental protection regulations stipulated by the state.

(2) Our industry is still in the stage of low-end competition, with low technical content and low added value of tungsten products. At the same time, our tungsten products industry has not formed a good industrial chain and a good and orderly cooperation and competition relationship among enterprises in the industrial chain, so the price is very vulnerable to market factors and environment. Therefore, we need to effectively understand the social responsibilities and legal obligations of the industry, recognize the characteristics and weaknesses of the industry, adjust the production and operation policies and Strategies of the enterprise accordingly, improve quality and efficiency, and refine products according to the current industrial stage of the industry and enterprises.

The huge environmental cost of extensive industrial management in China

In addition to the enterprises in the stage of front-end tungsten concentrate, tungsten oxide and metal powder, the back-end fine processing part of China's current tungsten products industry is mainly divided into:





- 1) Metal tungsten products, such as tungsten wire, tungsten electrode and tungsten rod
- 2) Cemented carbide products (3) high specific gravity tungsten alloy, tungsten copper, tungsten silver and other alloys and various standard parts and special-shaped parts. Among them, the cemented carbide is the part with the largest consumption of tungsten raw materials, the highest output value in each year and the largest degree of competition. According to the current business form, history and future development of environmental protection and tungsten products, especially cemented carbide processing industry, we interviewed some professionals in the industry. Among them, Mr. Xu Suochuan, who was nearly 80 years old and worked in Xiamen Jinlu special alloy, which was in the high-end position in China's Cemented Carbide processing field before retirement, has some representative views and ideas, The following is his interview, which is also our reflection on China's tungsten products industry. The appendix is here for readers.



△Industrial Environmental Pollution

Current situation and reflection of cemented carbide industry in China:

<http://news.chinatungsten.com/word/tungste-carbide.pdf>

The following is an excerpt from the article:

**Firstly, why there were so many widows in the previous mines.**





I remember one year when I went to a mine in southern Jiangxi to purchase tungsten ore, I found that the conditions of the mine were difficult. The miners did not see the sun underground for many years. There were not only tungsten ore, but also radioactive rare earth ore. what's more, due to the lack of technical, economic conditions and protection, the workers and masters engaged in mining for a long time were prone to silicosis. That's why the tungsten mines in the mountains have the most widows. After returning from the mine, I even felt more inexplicable guilt, and often told the company's financial personnel that in any case, they could not default on the money of the mine, which was hard-earned money in exchange for their lives. We have to think deeply. Does the price we pay to the mine really reflect the price we pay for maintenance? Do we really think the current price is too high? If we take into account the efforts, efforts and health of generations, we should get different results.

### **Secondly, why do foreigners like to buy tungsten primary products.**

Tungsten products deep-processing enterprises in western developed countries are not willing to buy our tungsten alloys and other processing materials, but tend to purchase primary raw materials such as tungsten oxide and ammonium paratungstate. Of course, they will not directly use tungsten concentrate, not because our smelting technology is more advanced than that of foreigners, But the process from tungsten ore to tungsten oxide is the most serious environmental pollution of tungsten products. A large amount of water is required for gravity separation of tungsten concentrate, and strong acid or caustic soda and many chemicals are required for refining tungstic acid, which is harmful to human body and the environment. However, the cost and difficulty of environmental restoration and environmental restoration are huge and time-consuming. In addition, there are a large number of tailings ponds with heavy metal pollution and mountain safety hazards. We have sacrificed resources and the environment, but the bulk of our profits are earned by foreigners.

### **Thirdly, why are we a big country in tungsten products rather than a powerful country.**

China's output of cemented carbide accounts for 60% of the world. There are about 160 cemented carbide plants in China, which sounds great, but the output is first-class in the world, but the technology is third rate in the world, mainly producing medium and low-end products. Even at the end of last century, several large state-owned factories such as 601, 603, 764 and 212 successively introduced production lines from Sweden and Japan, the technology gap is still large. Sweden Sandvik, Germany Luxembourg, the United States Kenner, Israel iska and other large foreign factories carry out technological upgrading every 5-10 years, which can sell knives with raw materials of dozens of yuan to





thousands of yuan. However, most alloy manufacturers in China are still in the stage of vicious competition at low prices and killing each other. Mr. Lao has also communicated with some peers of large tungsten enterprises. Why can't our enterprises calm down and learn from the Germans, study technology and create several fist products, but almost everyone's feeling is "The market environment is like this. If they don't make medium and low-end products, others will do it. If they don't do it, they can still live. If they don't do it, they can't even live. If the enterprise's survival is a problem, how can we talk about integrity". So far, the old gentleman still continues to lament that the current tungsten products industry is full of "impetuosity", and the precious resources left by his ancestors do not reflect their due value.

-----The End-----







## Editor's Note

When this article was collated and translated by the end of November 2021, much large changes have been taking place in China and the globally, the price of tungsten in China's market did fall slightly after big rising, and only need to maintain a stable and consistent recovery state (see the trend chart for details attached in this paper). At the same time, several factors signed in this paper have indeed changed as expected: increased energy costs, strict implementation of restrictions, soaring energy shortage prices, rising exchange rates, which may create a record high, increasingly serious squeeze at Los Angeles port and Long Beach port, and the money imbalance will be alleviated in 2022, with increasing transportation costs, survival costs and in transit costs.

In the period before and after the completion of this paper, the "B3W" (Build Back Better World, like China's One Belt, One Road) proposed by the United States and the "Global Gateway" proposed by the European Union have made new progress. Earlier this month, U.S. revealed that as the first project of the B3W initiative, the United States will invest in 5 to 10 large-scale infrastructure projects around the world in January next year.

In September this year, European Commission President Von Delaine announced the "Global Gateway" 2022, the EU plans to raise 300 billion Euros to invest in infrastructure globally focusing on digital, health, energy, climate and other fields, according to it.

On October 19-21, 2021, China Tungsten Industry Association held 2021 China (Shanghai) Tungsten Raw Material Industry Development Summit. During the forum, major tungsten industry enterprises from China discussed the raw material production, processing technology and cost of materials, the market and future application scenarios of materials, the price of tungsten products and the future forecast of the market. It also gives an optimistic but cautious forecast for the future of tungsten products industry.

We will be happy to share Tungsten, Molybdenum and Rare Earth market information and price trends in the future, and we will also be very pleased to cooperate in any form with anyone who's interested in it all over the world.

DR. HANNS

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