



The Japanese Tungsten Market

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Advanced Material Japan
Shigeo Nakamura



Why the Rare Metal's price jump up last year?

Comparison between 1979 and 2005

1979's Mineral Shock

(Supply Factor)

- The second Oil Crisis
- Afghan War & Strike



(Demand Factor)

- New Asian Economy Rising up
- New Demand for High-Tech products



2005's Rare Metal Panic

- Energy Crisis
- Iraq War & Terrorism
- **Chinese mine's Factor**

Chinese Economy rise up

- BRIC's economy also
- Demand of IT trend

(New Factor)

- **Serious Ecological Problems**
- **New Nationalism for resources**

Tungsten is not the exception!

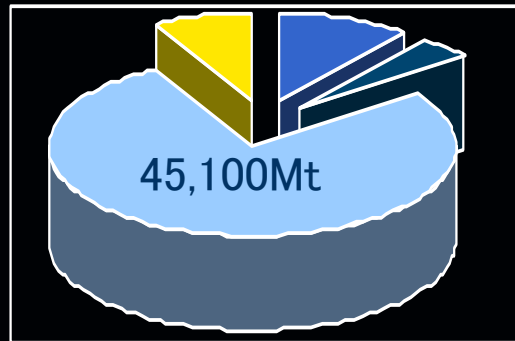


The Statistics of the World

Tungsten Market

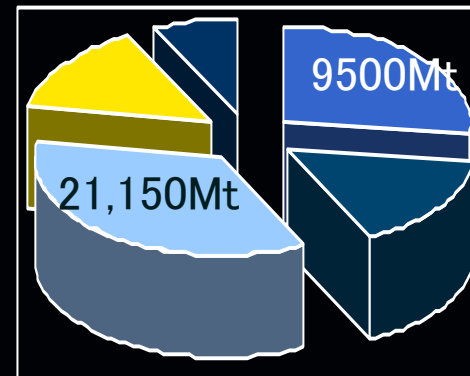
As W content

Total supply: 58,550Mt



■ Western
■ DLA
■ China
■ Others

Total Demand: 60,100Mt



Japanese import 12,000Mt

■ Europe
■ Japan
■ China
■ USA
■ Others

•The amount of the world demand in 2005 is 60,100 tons. Total Japanese demand is 9,500 tons. Import share of the Chinese raw material is 80% or more and will extremely have the problem in the stability of the supply in the future when thinking about the rise of the domestic demand, the stop of the export duty refund system, export permission system of China.



The Issue of Japanese Tungsten Industry

- The good condition of the tungsten market continues for three years. The shipment increased by about 12% in 2005. The import price rose by 60 percent. However, the profit did not go up because it was not able to raise the domestic market price.
- Demand expands further by 15% in 2006. The following policies are necessary. :
- Recycling of scrap. Developments of resource other than China. Development of the alternative material. Maintenance of savings system.



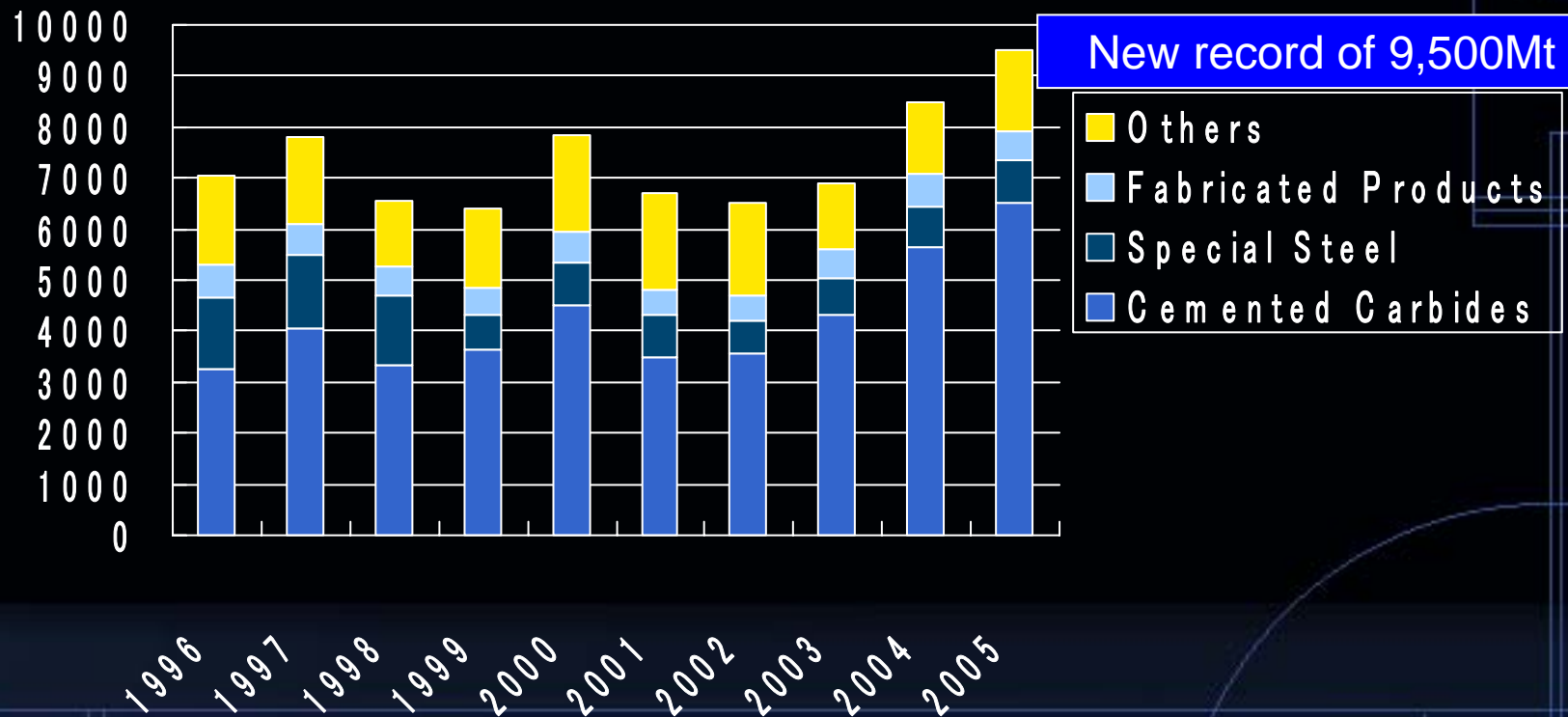
What has happened in the tungsten market in Japan now?

1. Japanese Tungsten Market Trends
2. Tungsten Supply in 2005
3. Tungsten Consumption in 2005
4. Details of Tungsten Imports Supply
5. Details of Tungsten Consumption



Japanese Tungsten Market Trends

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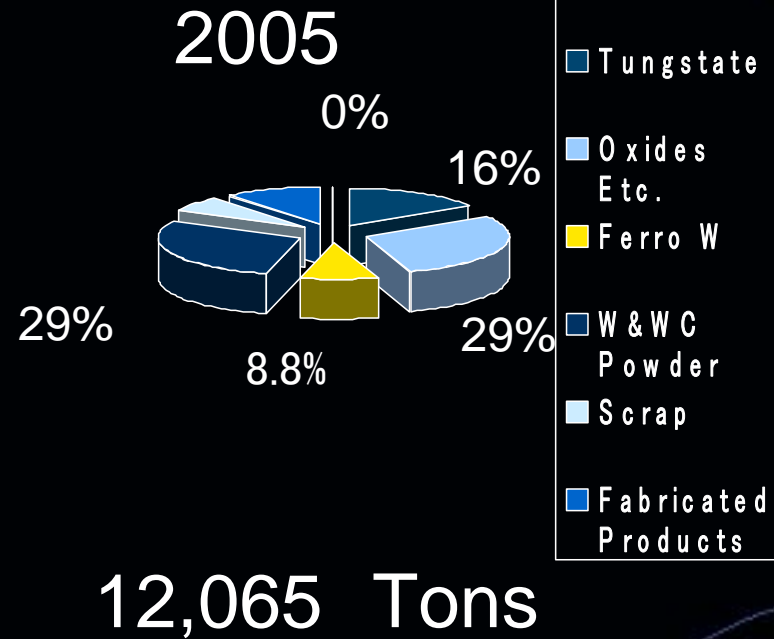
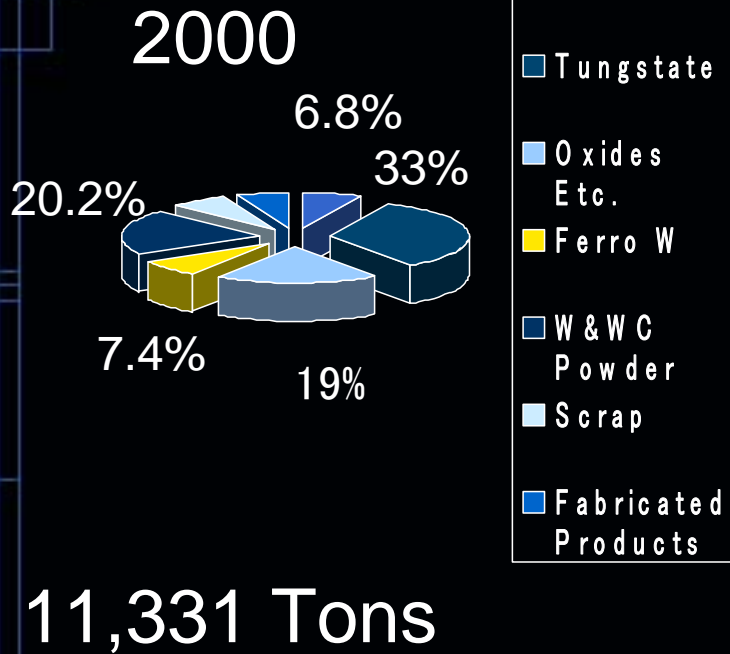


IT bubble hits 7,850Mt in 2000, and decreased few years, then it improved to 9,500Mt in 2005. It will hit probably new record in 2006, too.



Tungsten Supply in 2005

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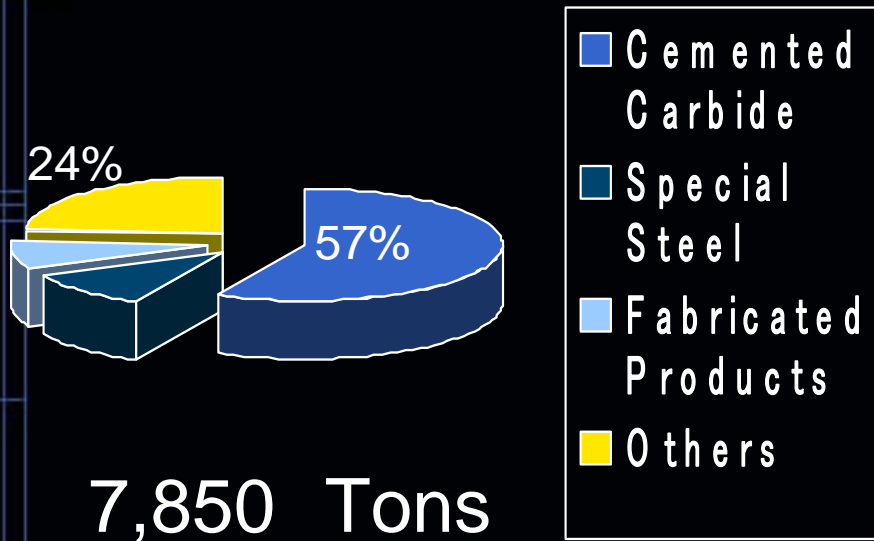
Total supply of W hits 12,065Mt in 2005 from 11,331Mt in 2000.(6.5% increase)
W-Ore. decreased from 6.8% to 0%. And Tungstate decreased from 33% to 16%
Oxides increased from 19% to 29%. W and WC increased from 20% to 29%.



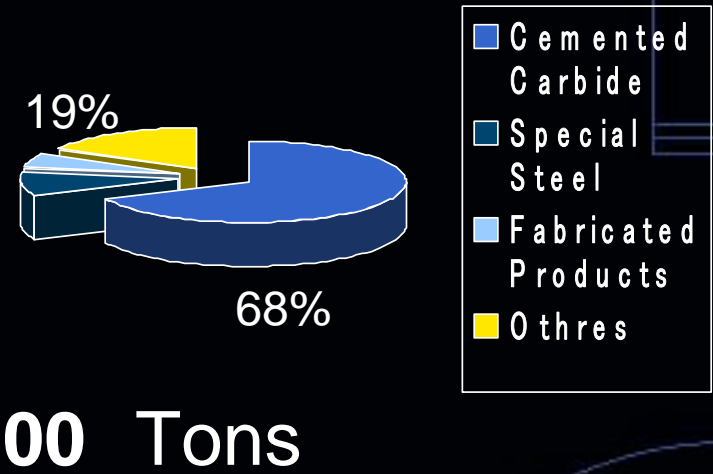
Tungsten Consumption in 2005

As W content

2000



2005



In 2005, consumption hits 9,500Mt compared 21% increase than 2000. Cemented carbides increased 11 points from 57% in 2000 to 68% in 2005. It will be continued this trend till 2008.

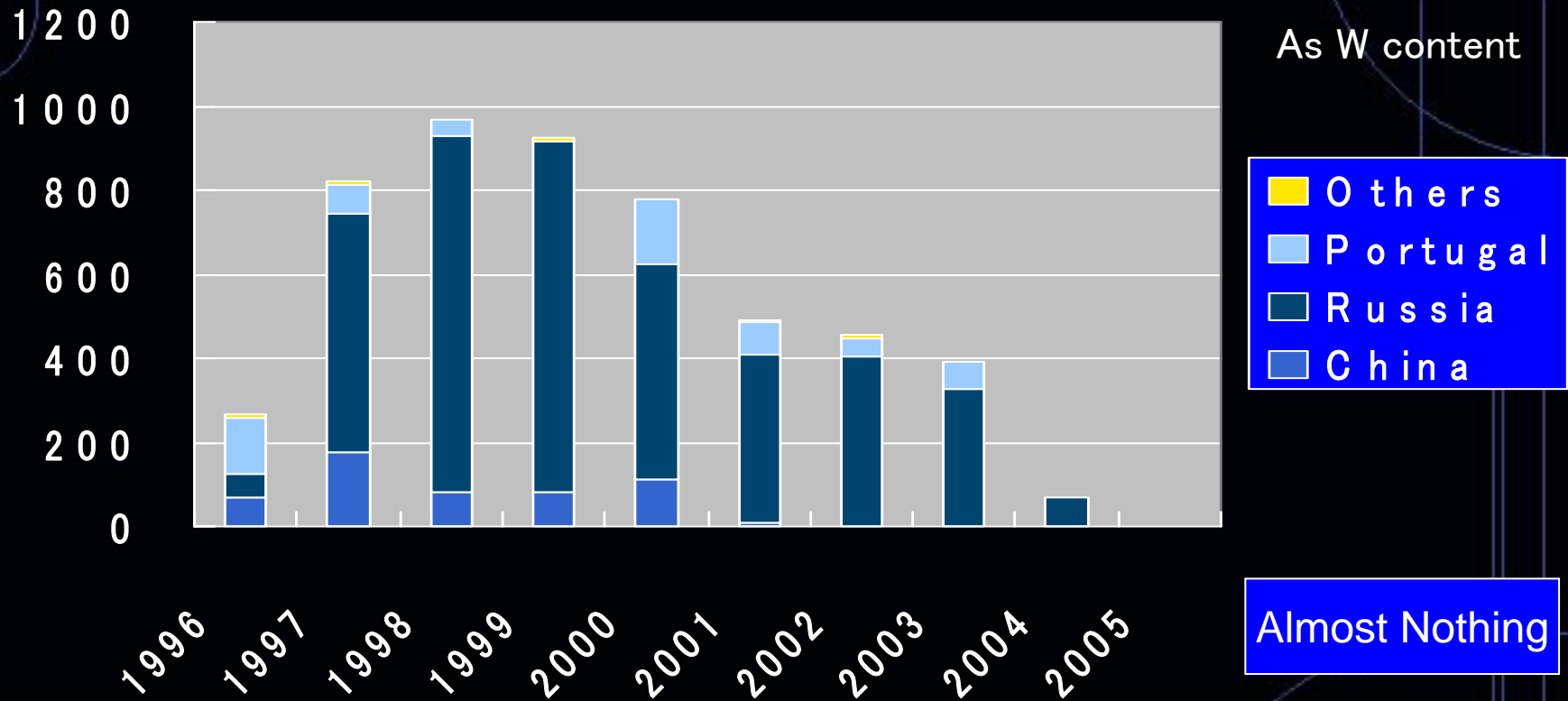


Details of import results of tungsten raw material

1. Tungsten Ore Concentrates
2. Tungstate
3. Tungsten Oxides and Other Products
4. Tungsten Metal Powders
5. Tungsten Fabricated Products
6. Ferro-Tungsten
7. Imports Summary of each Materials



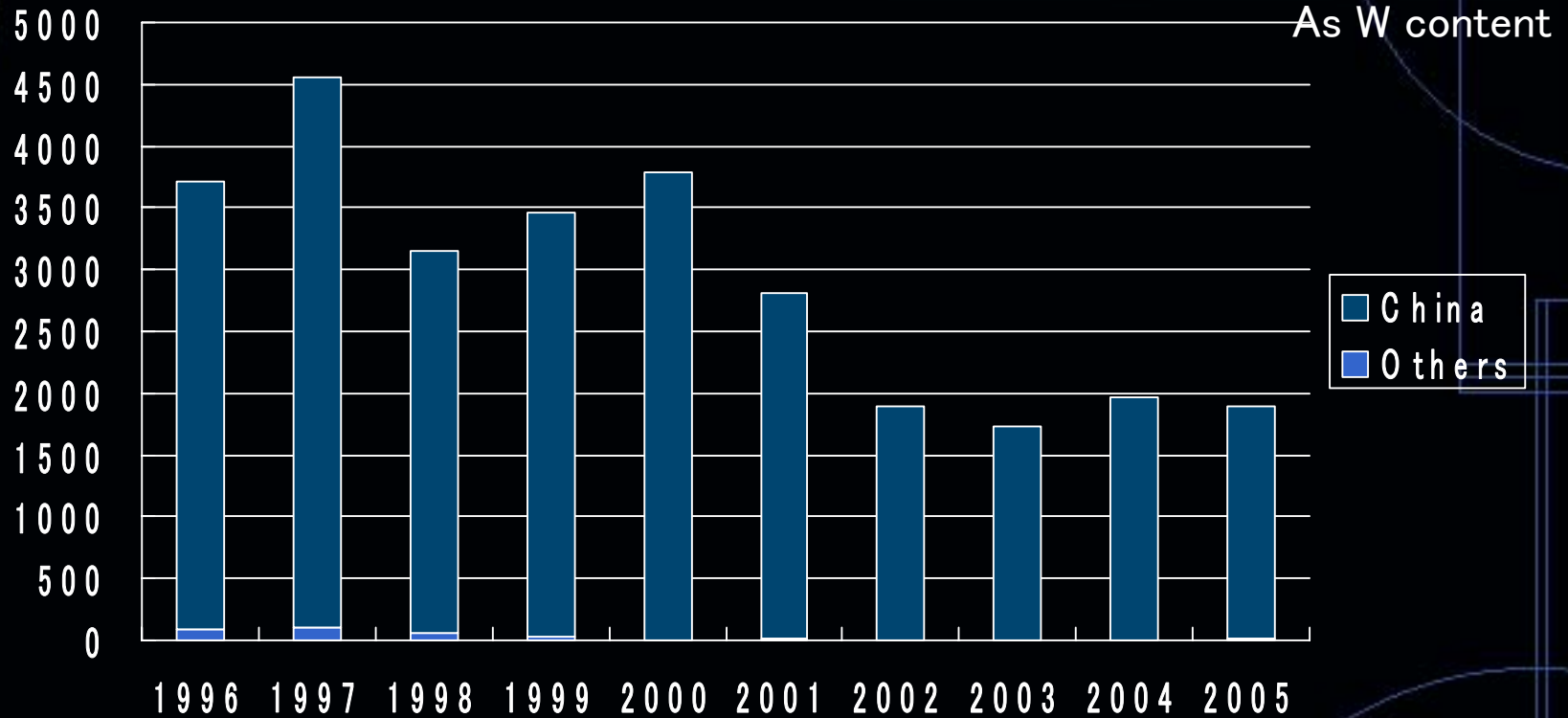
Import of Tungsten Ore Concentrate



Early 90' s, APT import increased instead of W-concentrate import but Japanese smelters recovered refining capacity in 1997. The peak of the concentrate import in 1998 (968Mt) was changed to down trend, and it became almost nothing in 2005.



Import of APT

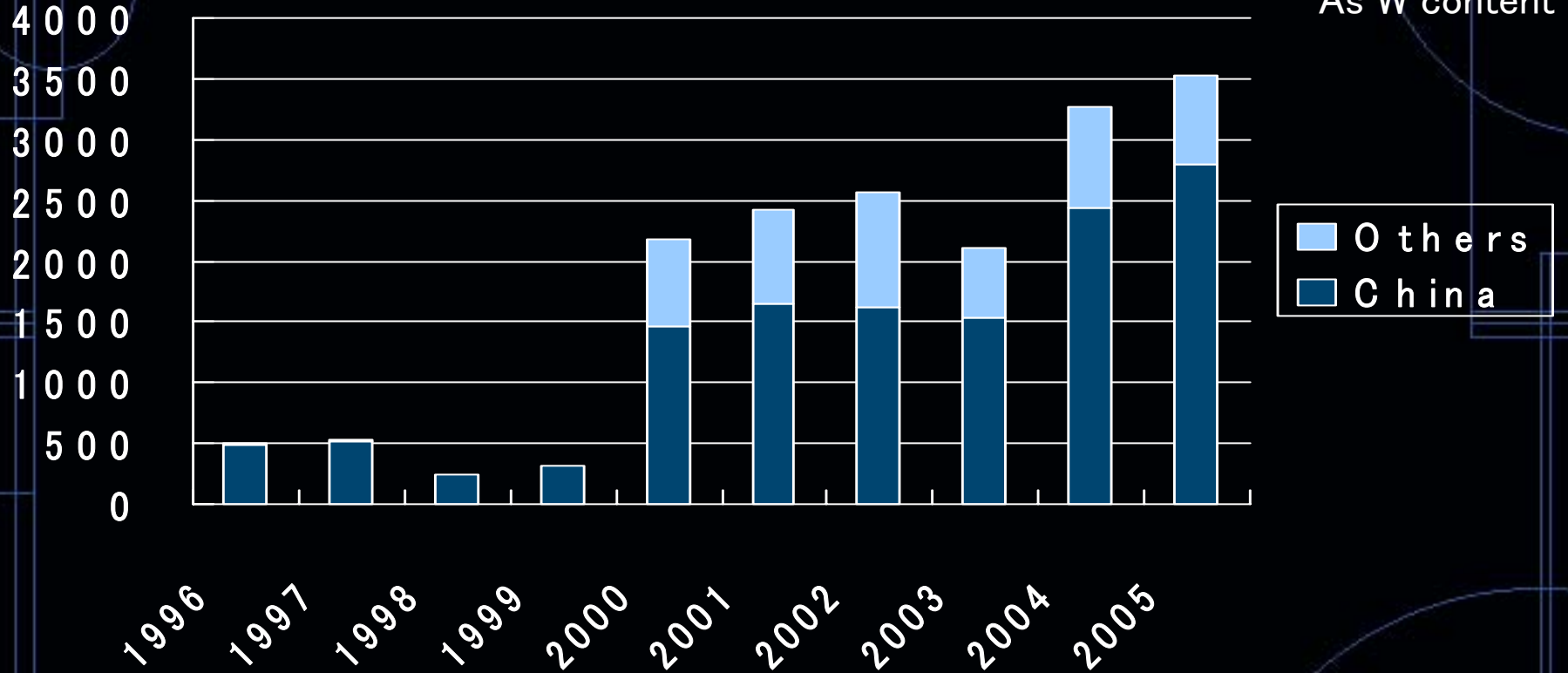


APT import decreased every year after 2000.

1900Mt Import in 2005 Is about half of the 2000' s quantity. It is slightly decreased from 2004. W and WC Imports influenced these down trends.



Imports of Tungsten Oxides and Other Products

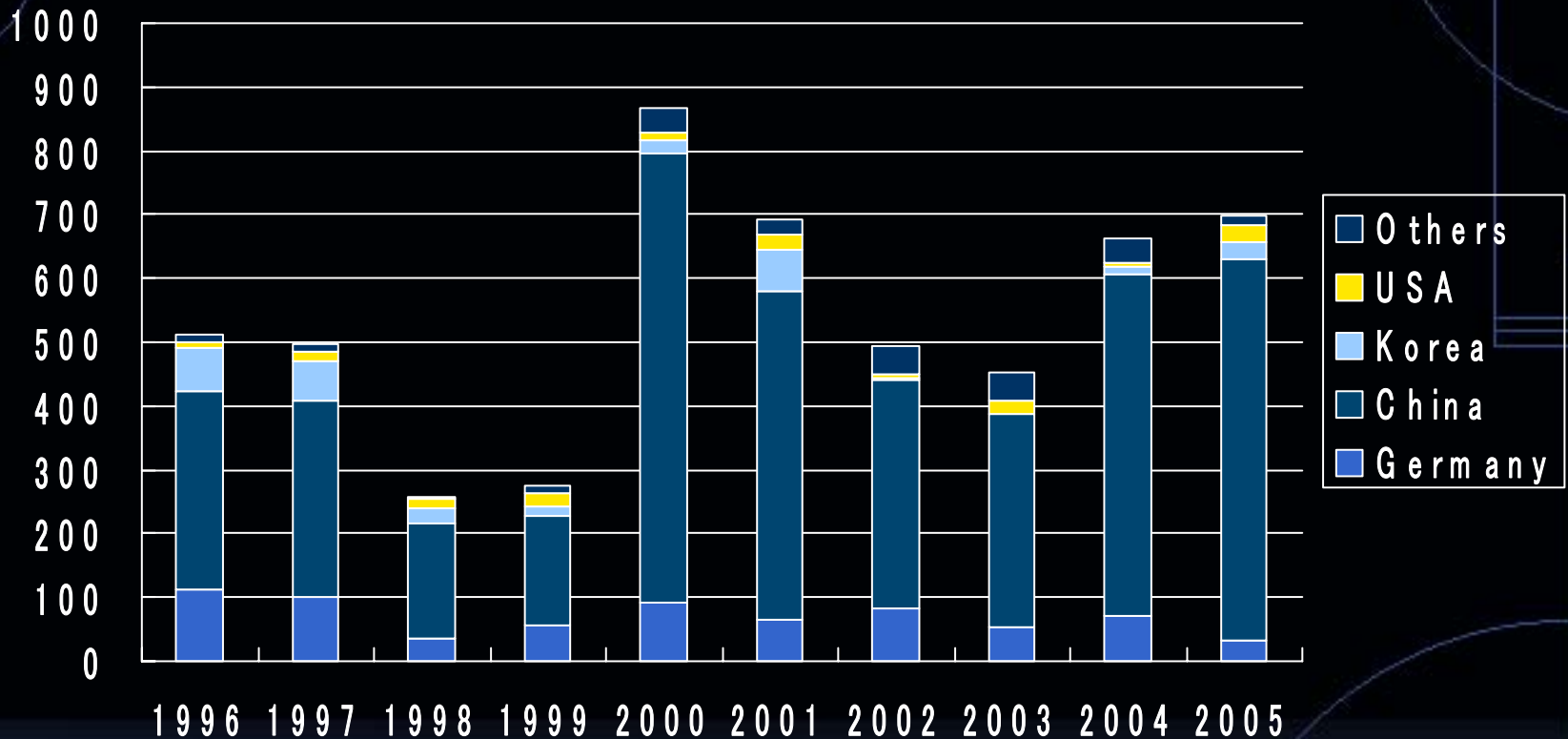


Strict environmental control of nitrogen leads to decrease of APT ,and after that Oxides and other products increased sharply.
The import share from China becomes 79% in 2005.



Imports of Tungsten Metal Powder

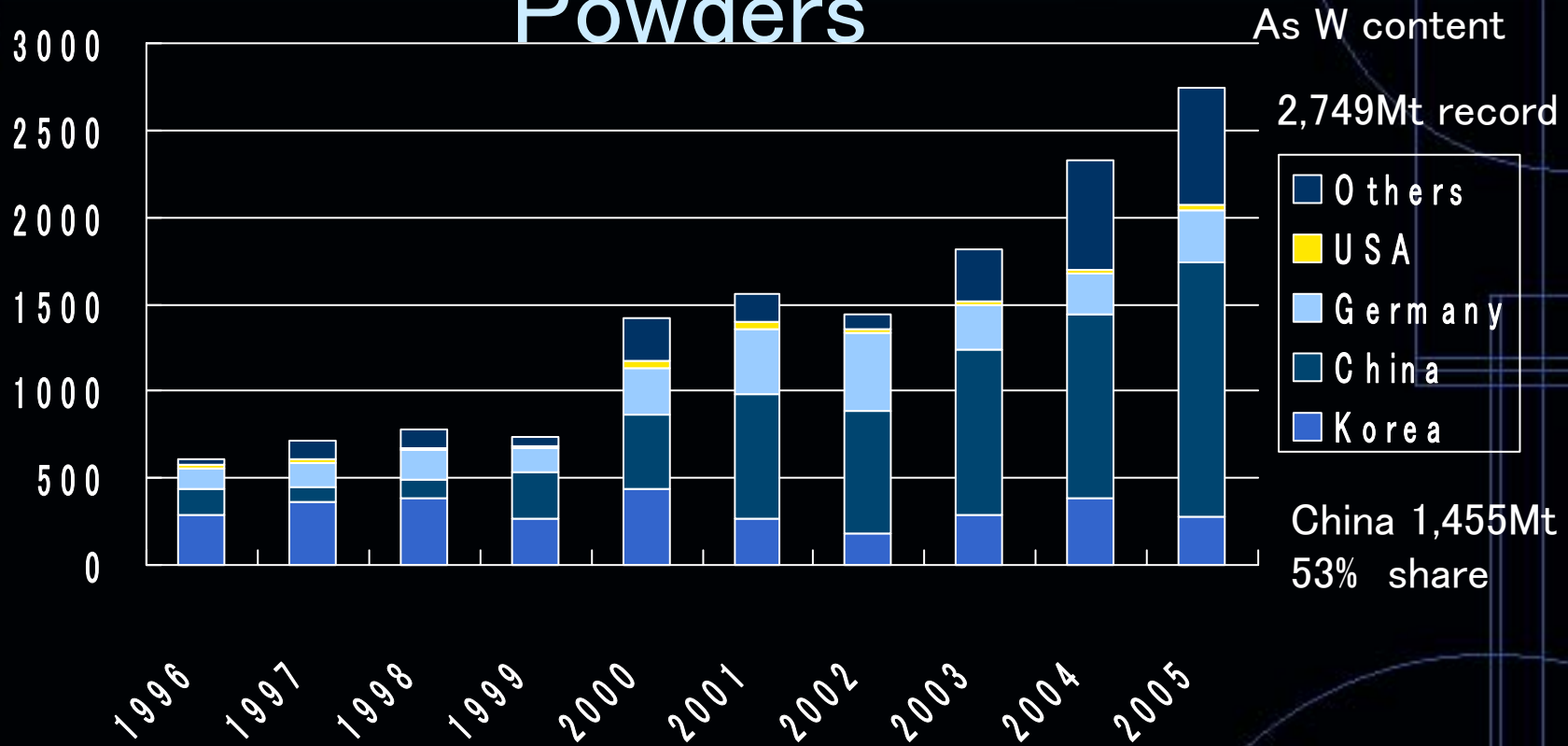
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Import of Tungsten Metal Powder hits 868Mt in 2000 which was big boom of heat sink Cu-W Alloy in the IT industry. In 2005, it increase again at 699Mt from 663Mt in 2004. Chinese share becomes 85% in 2005.



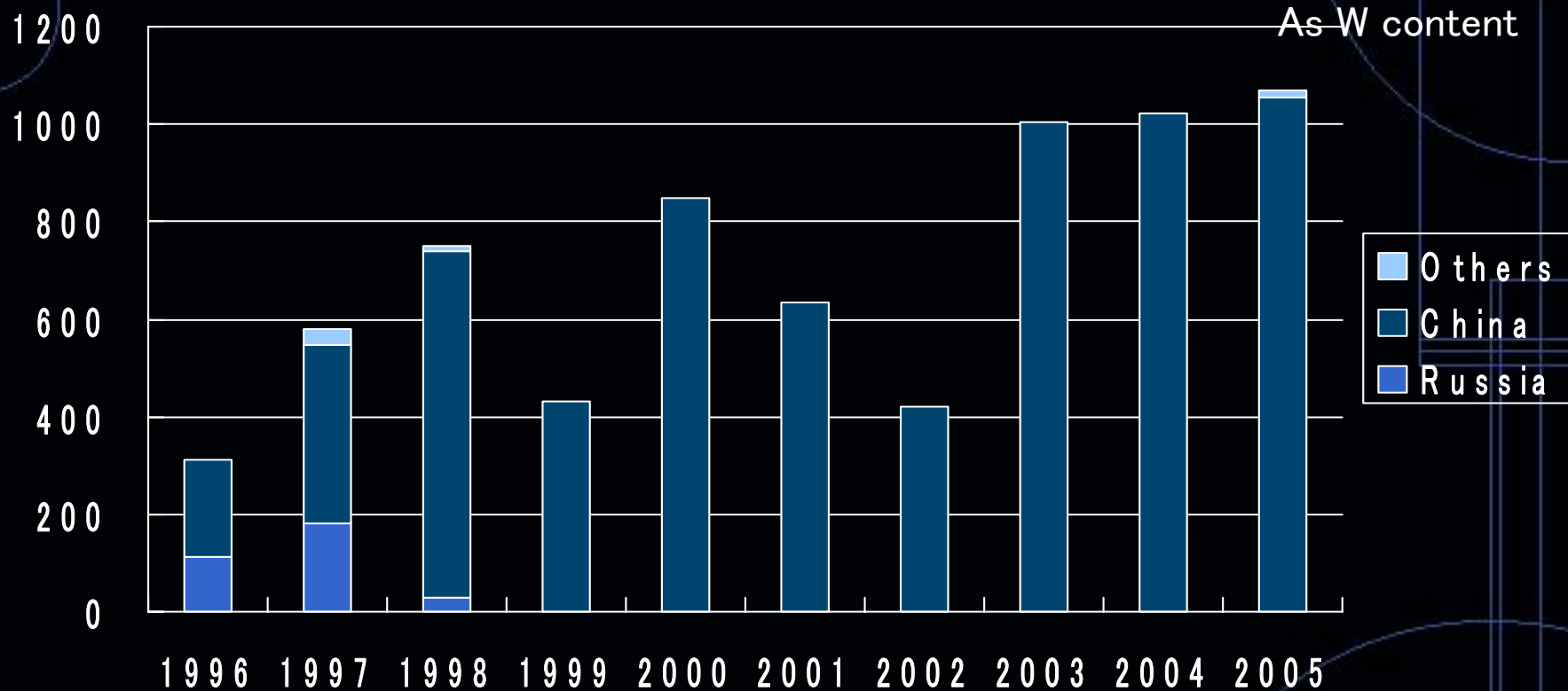
Imports of Tungsten Carbide Powders



Import of WC Powder increased to 2,749Mt in 2005 from 2,332Mt in 2004. This figure is nearly double than 5 years ago in 2000. Import from China was dramatically increased at 1,455Mt from 423Mt in 2000. Austria exports 543Mt and Korea exports 300Mt to Japanese market in 2005.



Imports of Ferro Tungsten

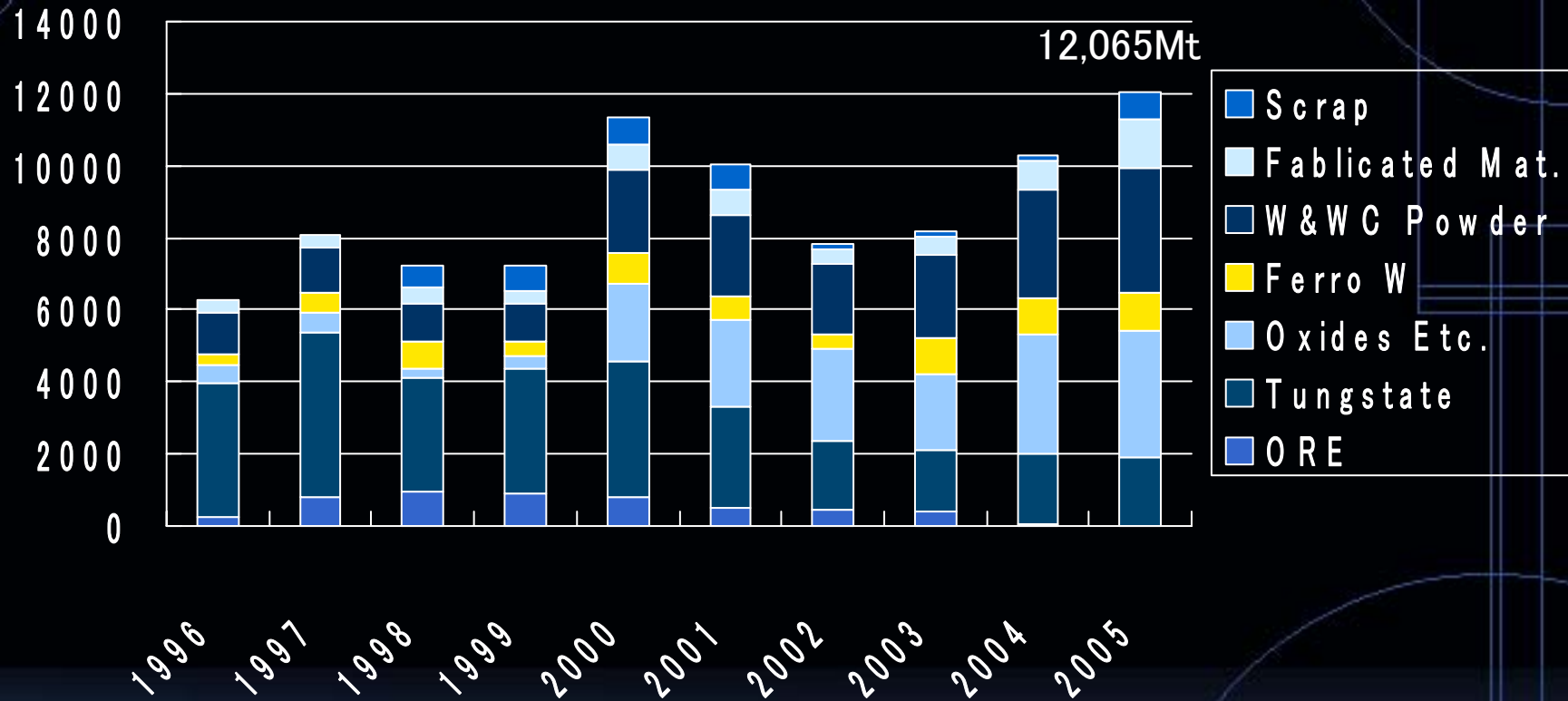


In 2005 it was the new record at 1,070Mt . This high rate Import continued to The first half of 2006,too. Import share from China became 98.6% in 2005.



Import Summary by kinds of Materials

As W content



Total import of Tungsten materials increased to 12,065Mt in 2005 from 10,581Mt in 2000. Import of APT decreased trend is not changed because of the shift to Oxides, Metal Powder, Tungsten Carbide, which are value-added products.

The peak of 10,581 in 2000 becomes 12,065Mt in 2005.

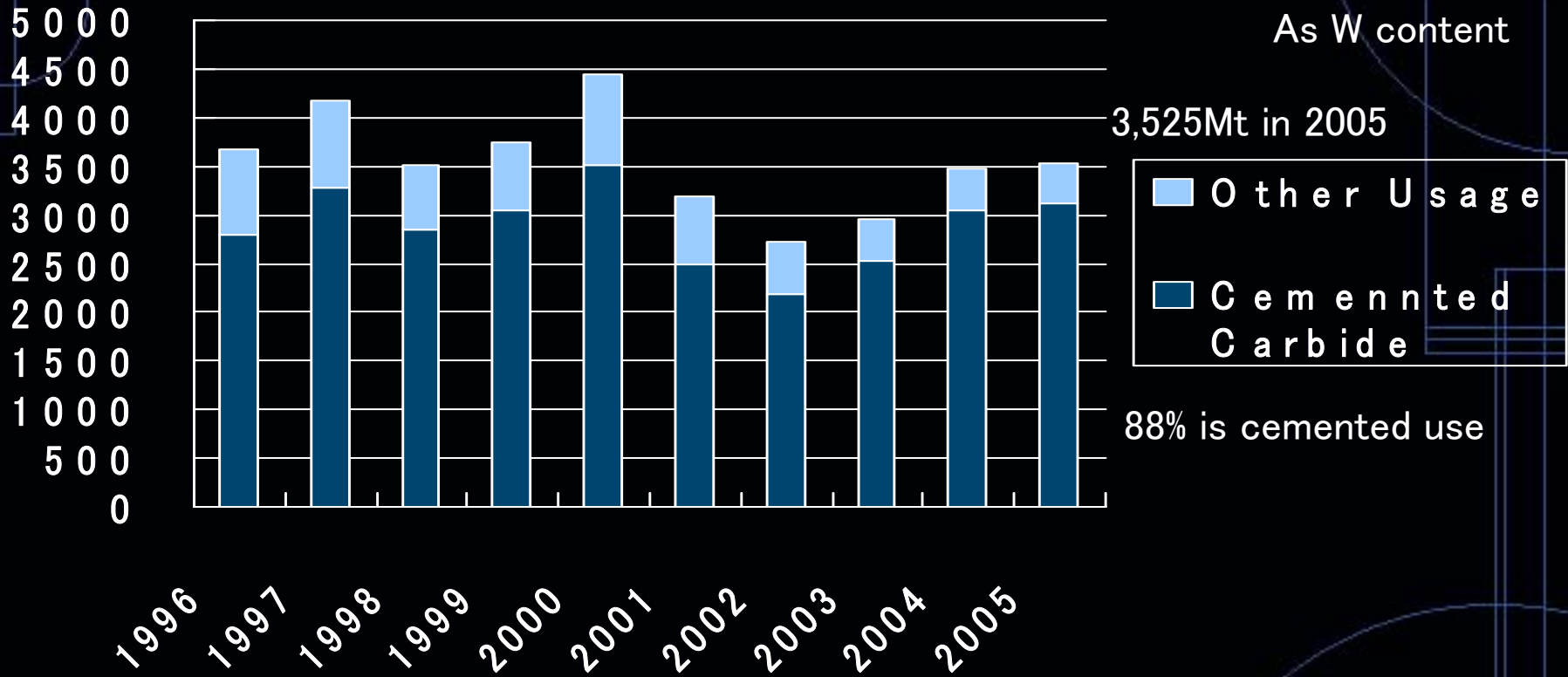


What's happen in Tungsten Consumption

1. Tungsten Powder Production
2. Cemented Carbide Production
3. Tungsten Fabricated Products
4. Tungsten Fabricated Product Export
5. Summary of Tungsten consumption



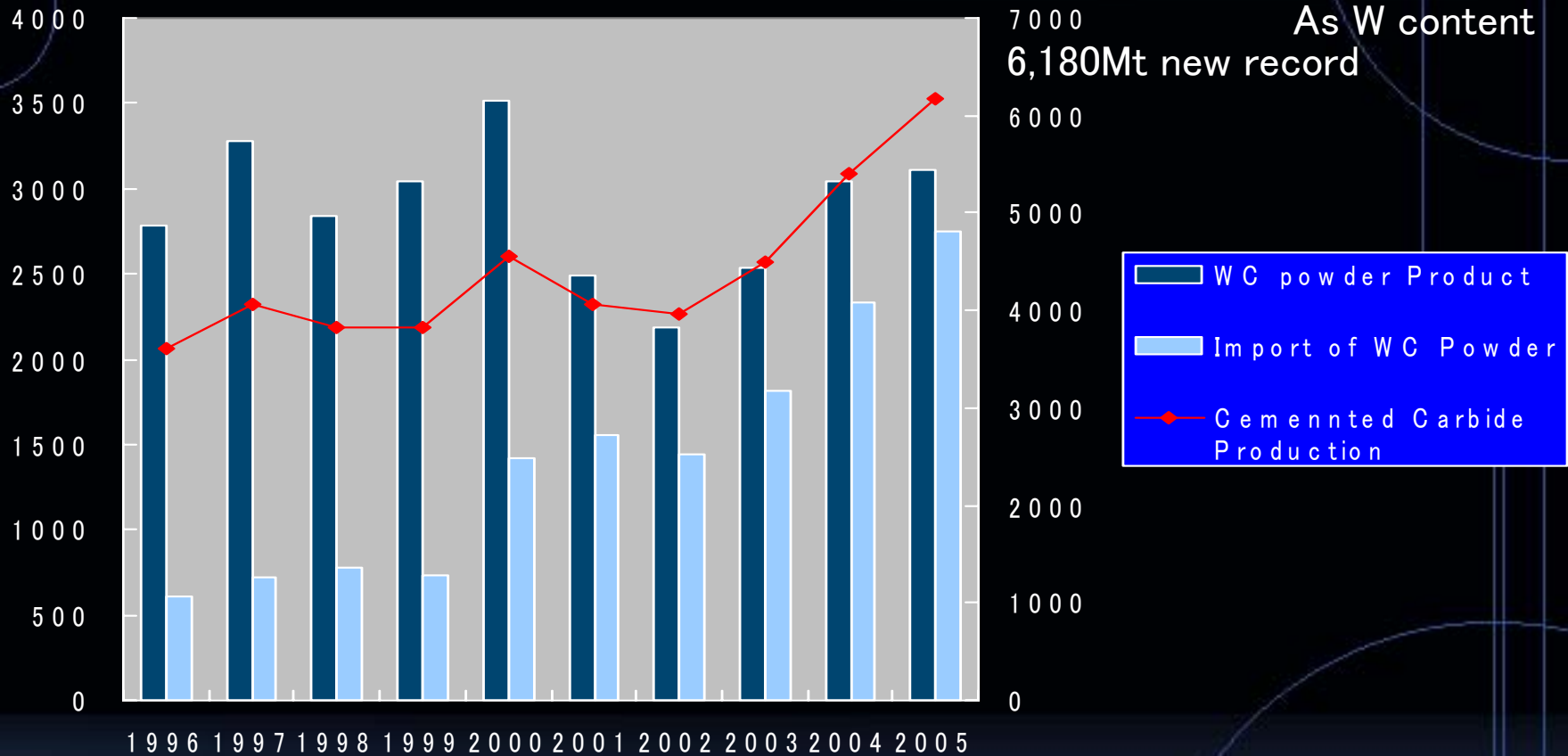
Tungsten Powder Production



In 2000 the production of Tungsten Metal Powder hit its peak for 4,448Mt. In 2002 of 2,722Mt, it bottomed out and was 2,949Mt In 2003, 3,471Mt in 2004 And In 2005 it reached at 3,525Mt and this is 15.5% Increase from last year. 88% of it was used for cemented carbide production in 2005.



Cemented Carbide Production

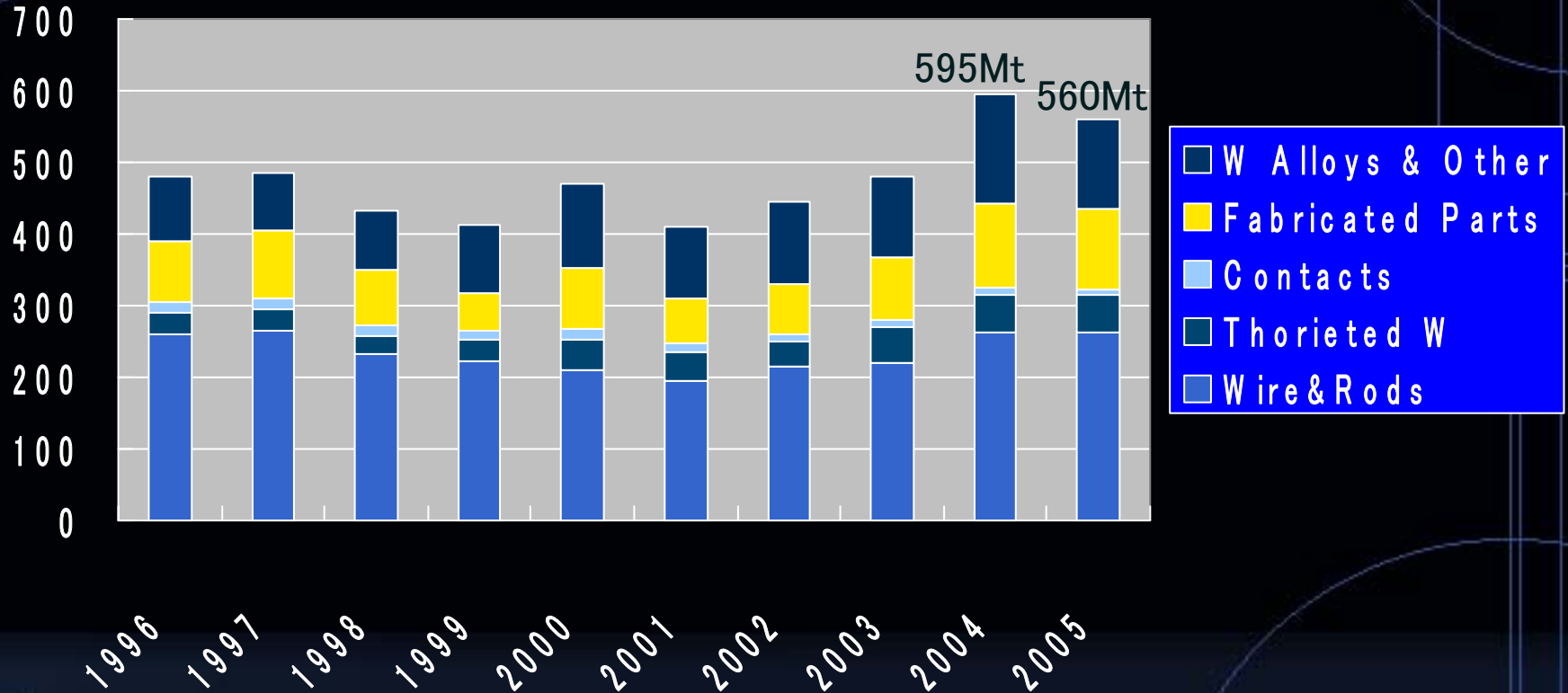


After IT bubble from 2001, cemented carbide production increased constantly and reached 6,180Mt in 2005. At the same time, it increased WC production of 3,110Mt is at 42% and WC import of 2,749Mt is at 92% from the bottom of its figure in 2002.



Tungsten Fabricated Products Production

As W content

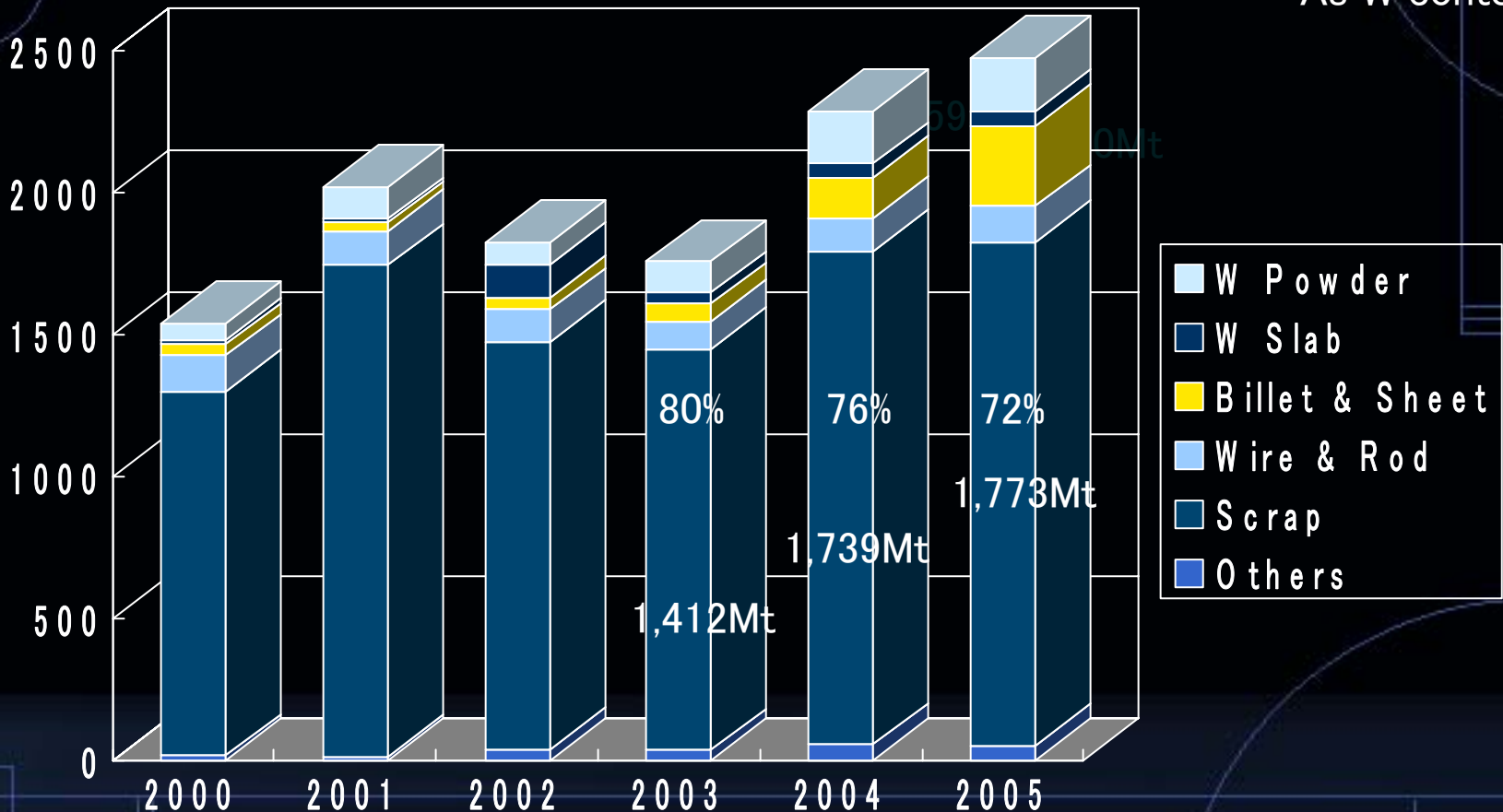


In 2005 tungsten fabricated products hit 560Mt production, it increased 20% compared with 2000 production. And it was 6% decreased from 2004, as we estimated it influenced Chinese fabricated products imported so much in 2005.



Tungsten Fabricated Product Export

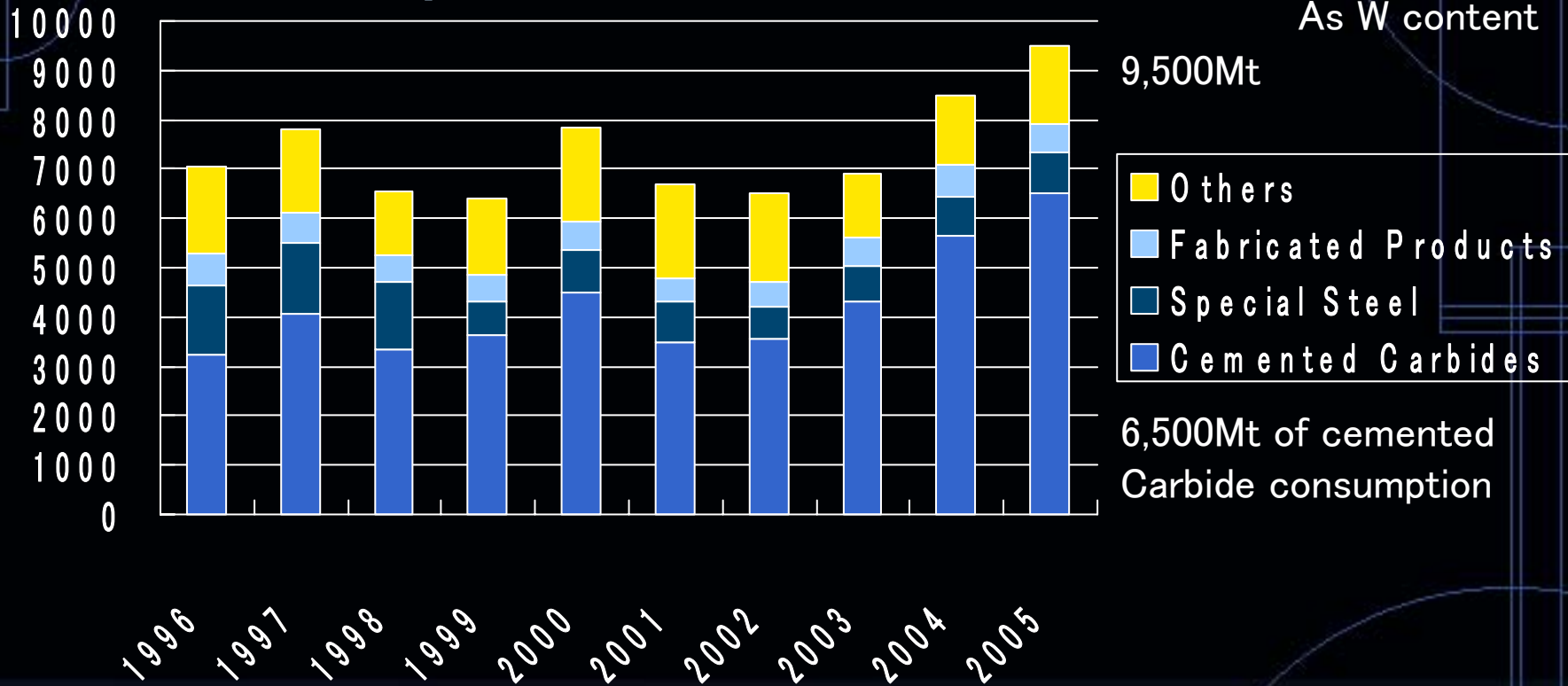
As W content



In 2005 tungsten fabricated products was exported 2,474Mt. It was increased 8% from 2004. Scrap was exported 1,773 Mt in 2005. And it was 6% increase from 2004. W was imported 12,065Mt and was exported 2,474Mt, and domestic market is around 9,591Mt (Actually 9,500Mt is AMJ analysis data)



Summary of Tungsten Consumption in Japanese domestic market



Consumption of cemented carbide increased double from 10 years ago. In 2005 new record of 6,500 Mt was hit but other type of the consumption remained. The trend of falling down from 2000 to 2003 totally changed and this tendency is still continued to 2006 and 2007.



The situation of Japanese Tungsten Industry

- "Unprofitable busy" afflicts the tungsten industry of Japan.
- The reason for W market price is not only unbalance of supply and demand but the worldwide money over plus influences for all Commodity.
- The mine obtains the big profit and the end doesn't. This market structure and situation will not maintain not so long any more.
- An uneconomical mine begins its production and sooner or later market will go down.

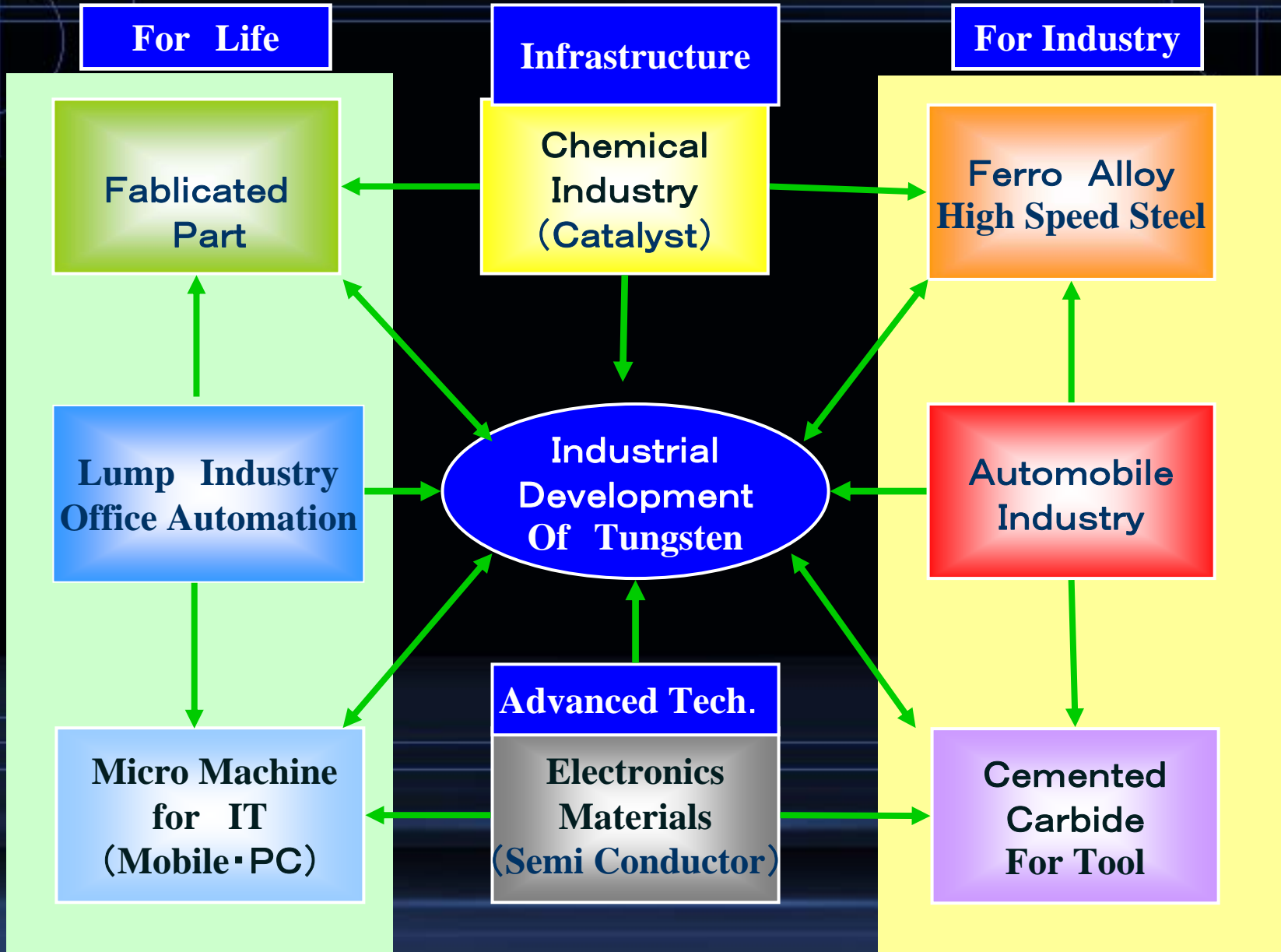


Expectation of price trend of tungsten market?

- **The nationalism of resources keeps high-market price in 2006 and 2007.**
- **In case of high price continues, a lot of new mines will be developed.**
- **A decrease in the amount of W use and the recycling rate improves and raw material shortage is eased.**
- **After oil price is falling down, the W market faces it downward in second half of 2007.**
- **High price continues till 2007 second half and the price collapses in 2008.**



Tungsten Market Development



Thank you for your attention.



WU

MU



Advanced Material Japan Corporation
Shigeo Nakamura