

Tungsten Market Overview

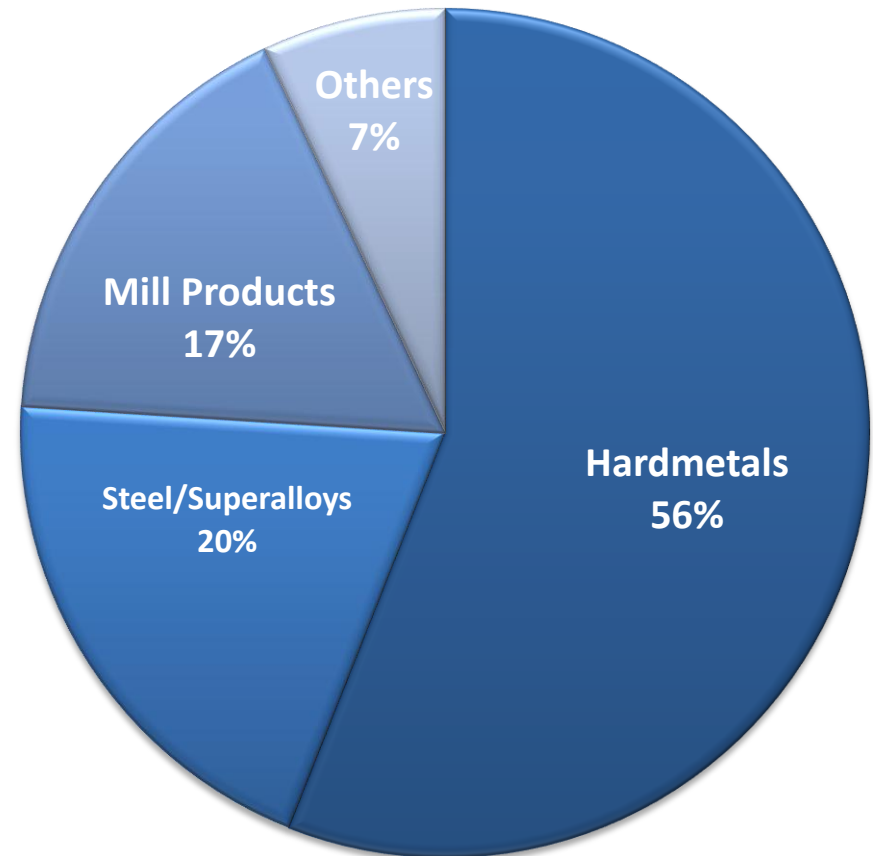
October 2010

(Includes proprietary information kindly provided by the CRU

www.crugroup.com)

- **Strongest of all metals – second strongest natural material after diamond**
- **Highest melting point of all metals at 3,400 C**
- **As a result no real satisfactory substitute for some key applications**
- **Most important use is as tungsten carbide in hardmetals mainly for cutting & drilling tools**
- **Other uses include specialist steels, electronics & military applications**
- **Environmentally “inert”**

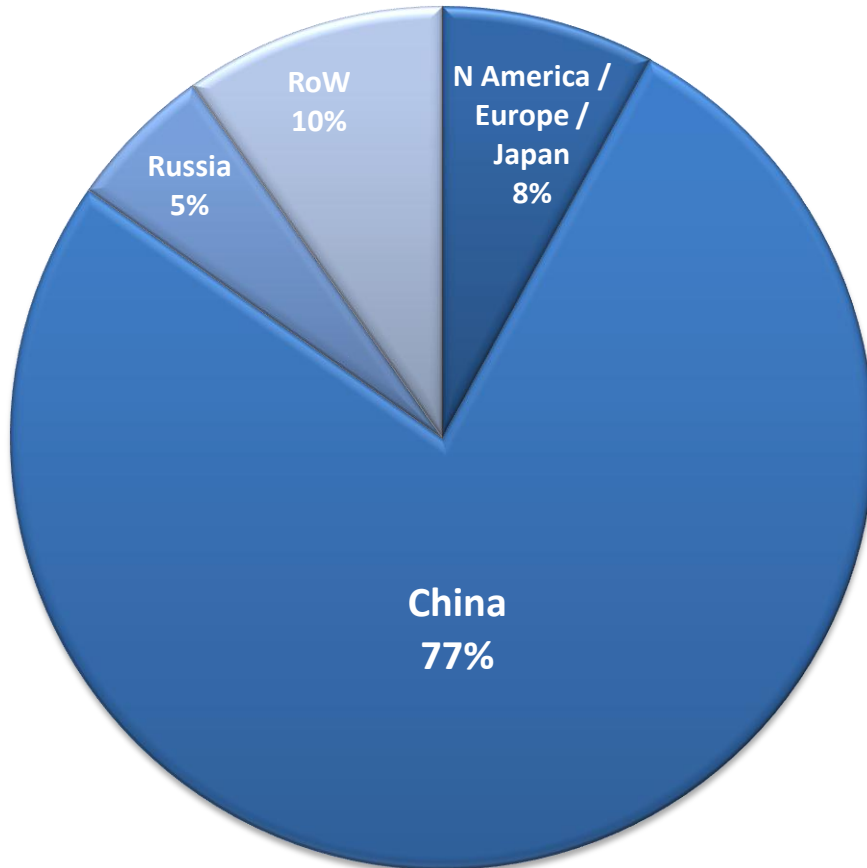
Global Tungsten Uses (2007)



Source: CRU “Tungsten: reviving the mining industry outside China: outlook for tungsten to 2013” (2009)

China Dominates World Primary Tungsten Production

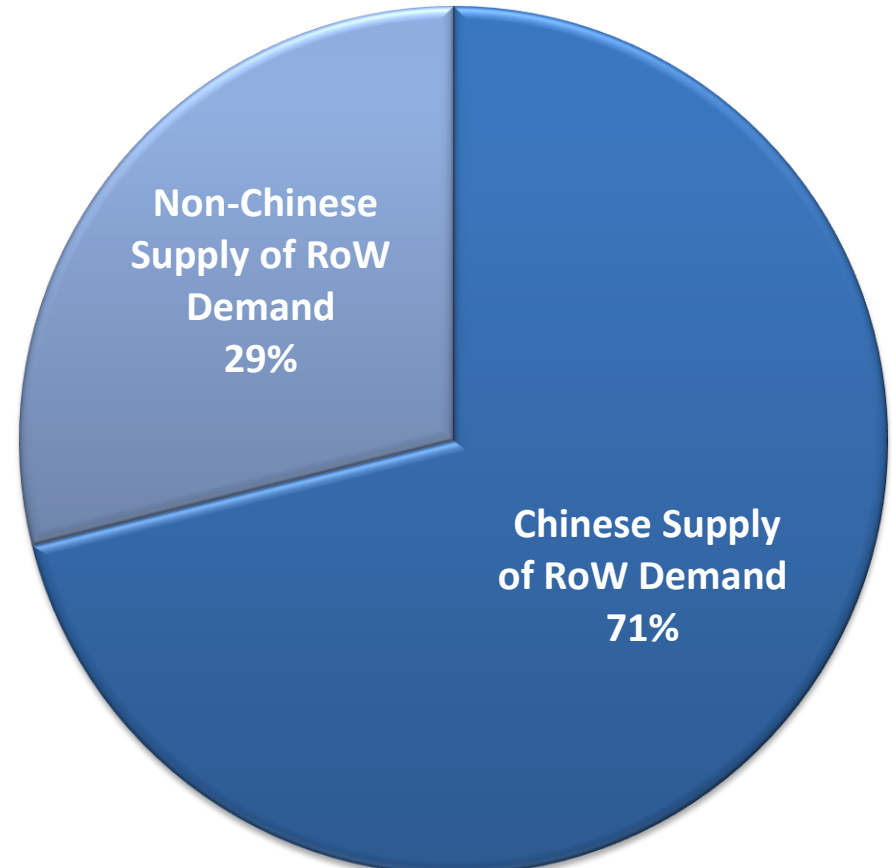
World Mine Production in 2008



Source: ITIA

And is the Main Source of Tungsten to the Rest of World (RoW)

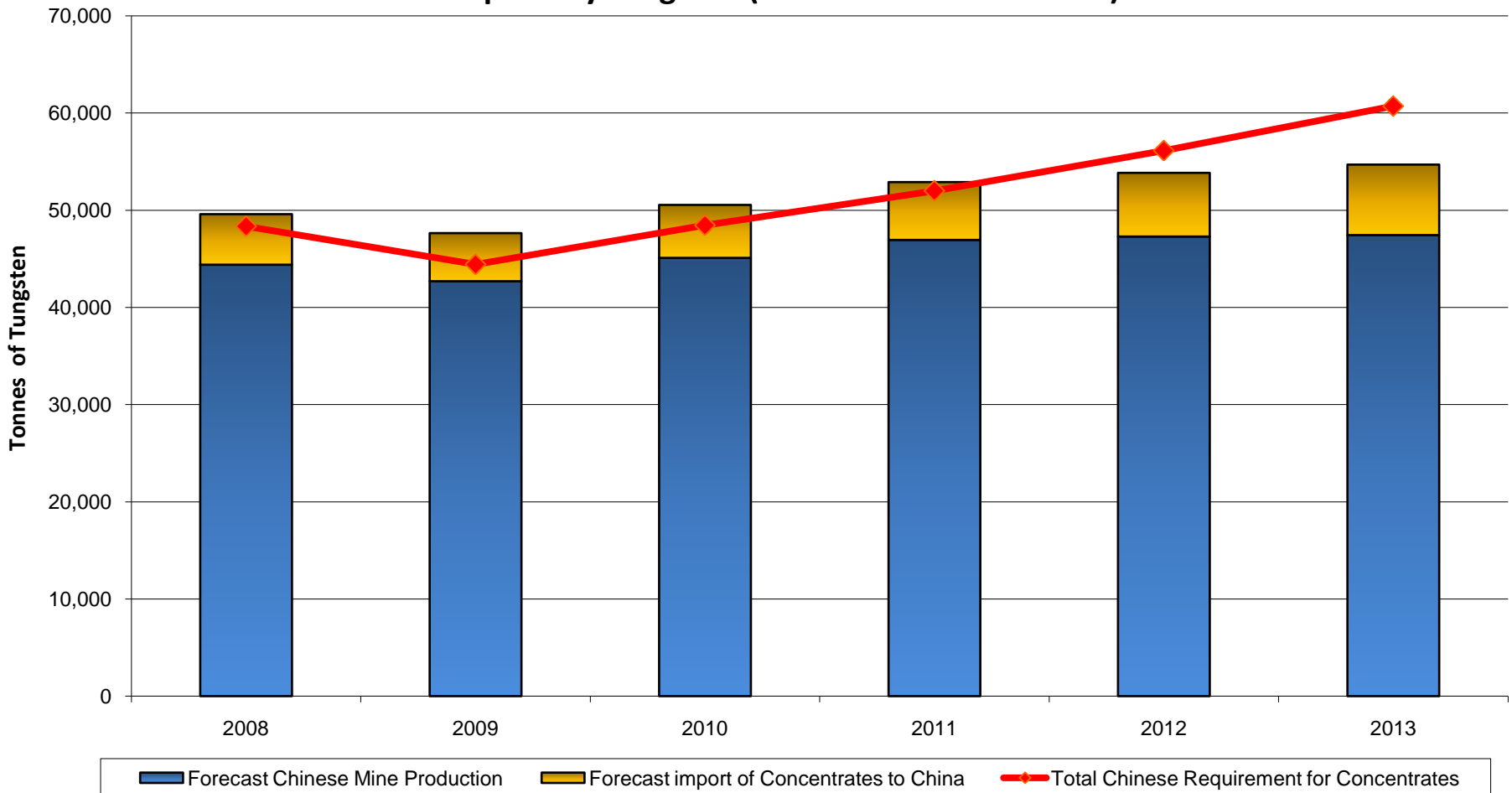
RoW Primary Tungsten Demand in 2008



Source: ITIA

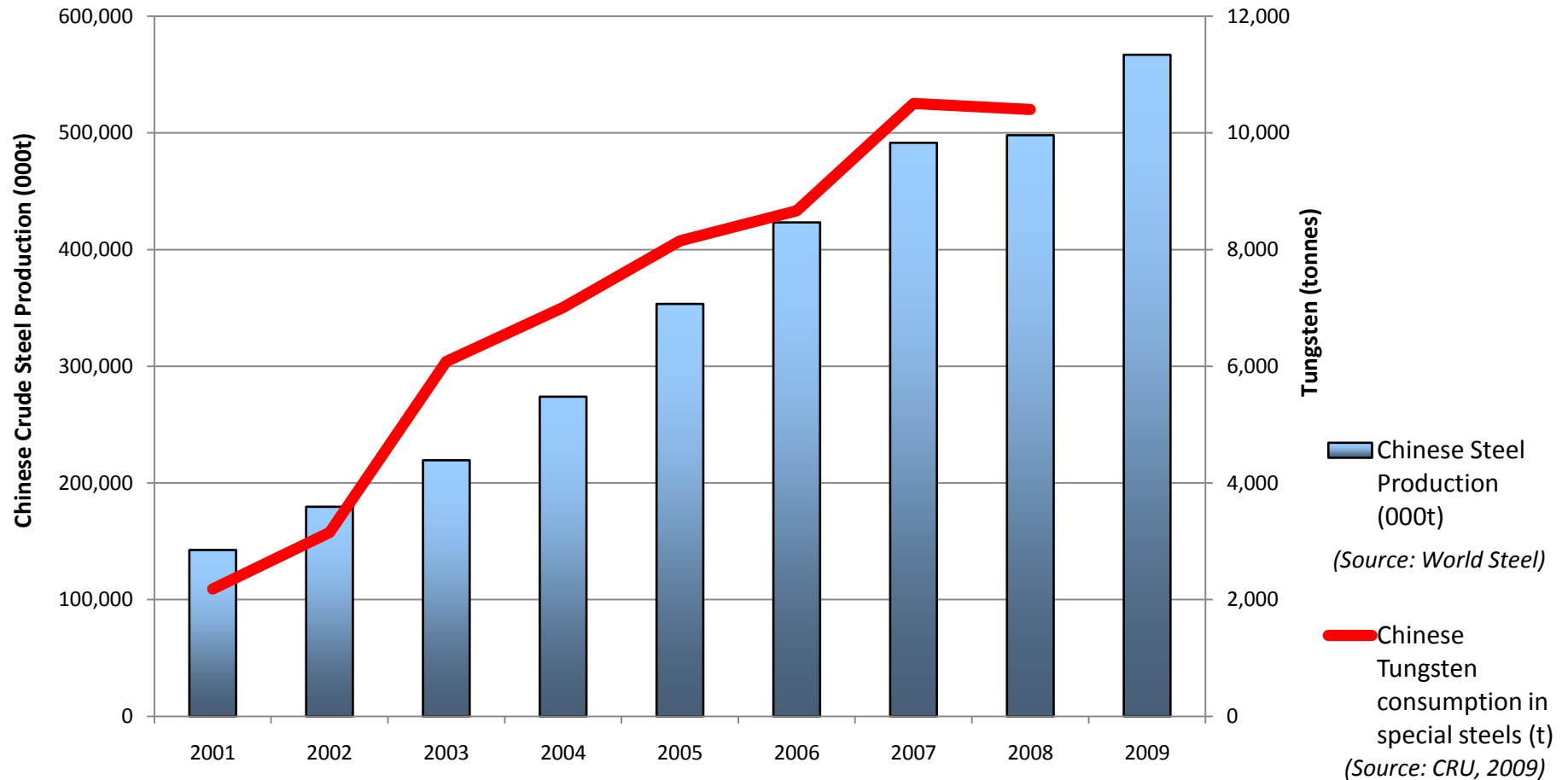
Forecast Chinese Primary Tungsten Supply Will No Longer Meet Chinese Demand

Forecast of Chinese Tungsten Production + Tungsten Imports v Chinese Demand for primary tungsten (tonnes metal contained)



Much of this Increased Demand is Being Driven by Chinese Use of Tungsten in Special Steels

Increasing Chinese Crude Steel Production (LHS) and consumption of Tungsten in China's "Special Steel" Production (RHS)



This Increased Demand, Coupled With Chinese Government Restrictions is Likely to Accelerate the Reduction of Tungsten Exports from China to the RoW

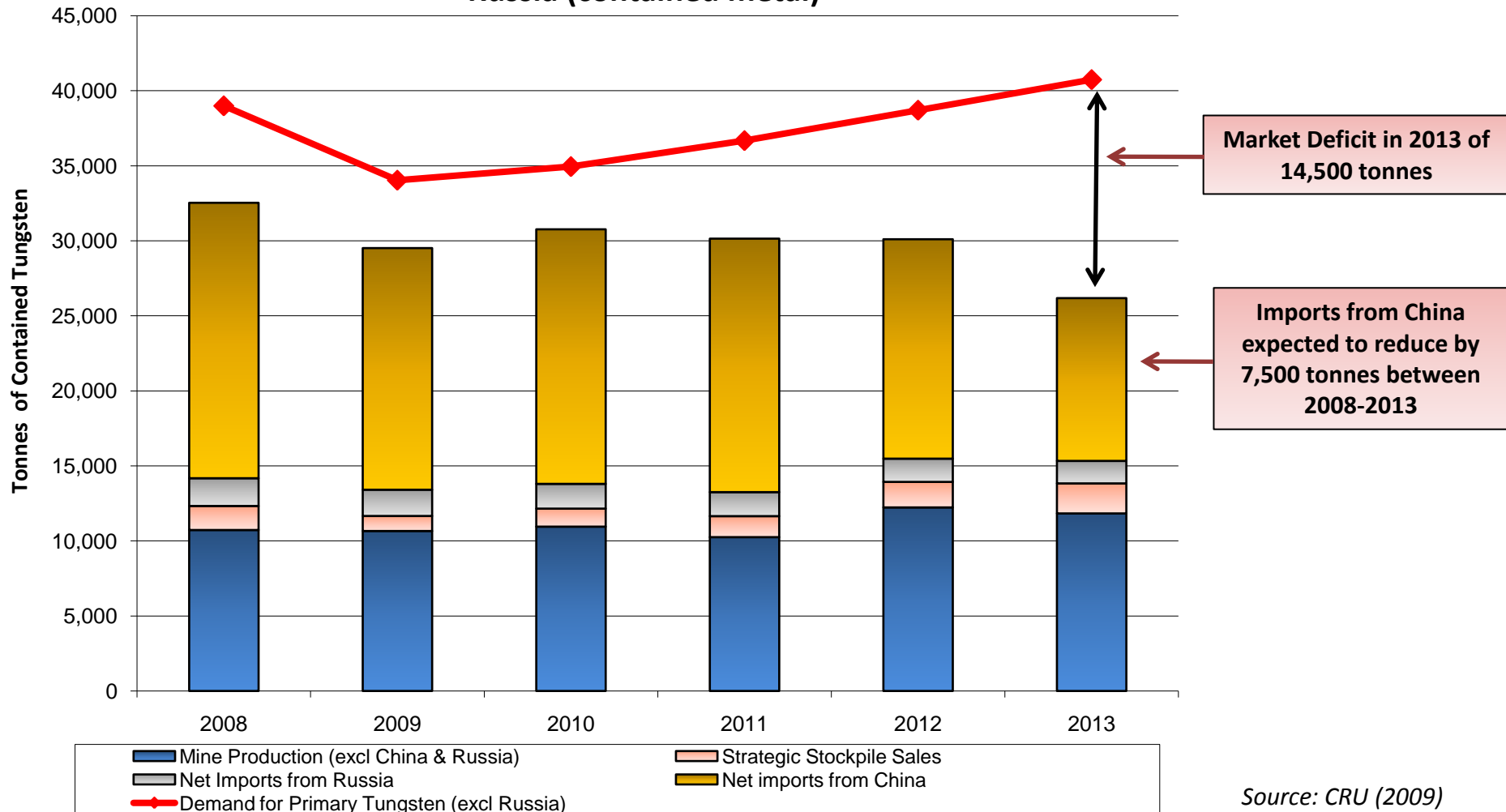
China has implemented measures to increase control of its domestic tungsten resources including:

- **Mining quotas**
- **Export quotas & tariffs**
- **Ban on foreign investment in mining**
- **Restrictions on the issuing of new mining licenses**

These measures would preserve depleting tungsten resources for domestic consumption

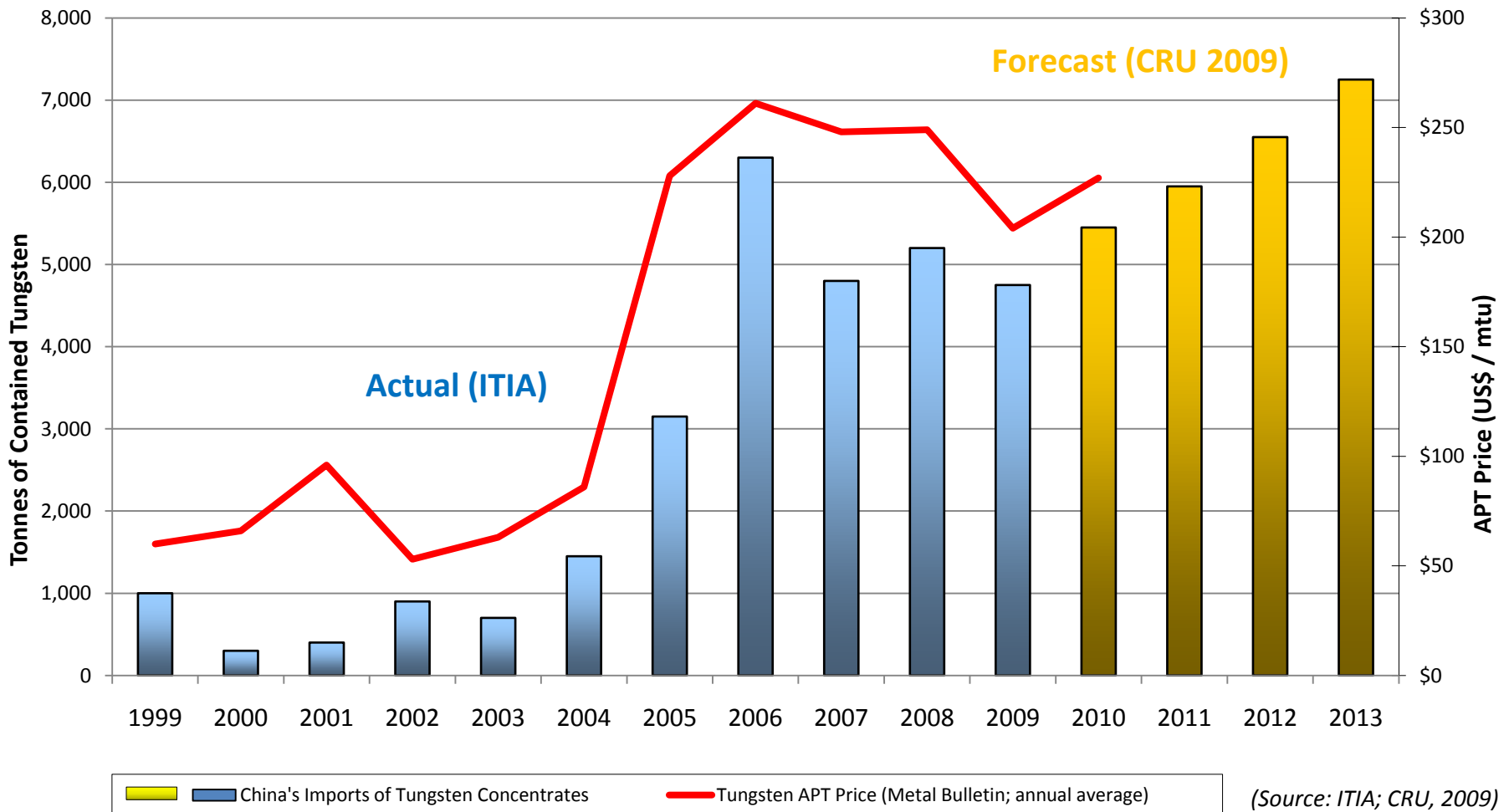
Leading to forecast significant shortages of primary tungsten outside of China

Forecasted Tungsten Demand V's Supply excluding China and Russia (contained metal)



These developments will continue to impact on the increasing APT price

China's Increasing Imports of Tungsten Concentrates (tonnes W) and APT Price



Tungsten as a Strategic Metal

- Tungsten listed by EU (June, 2010) as a “critical raw material”, due to its “high economic importance and high relative supply risk”

The EU Report “Critical Raw Materials for the EU” states:

- “high risks of quantitative and price disruption”
- “growing risks of “predatory” behaviour of China on the tungsten scrap market”
- “substitution possibilities limited by cost of alternative materials/technologies, lesser performance, and less environmental friendly alternatives”
- “worldwide loss of know-how if EU tungsten value chain is destroyed as it is the leader in the development of many tungsten products for automotive, aerospace, medical, lighting applications”
- “disappearance of EU tungsten industry would result in full dependence of several key industries on imports from abroad”

A tungsten mine producing 7-8% of world production outside China, will be an asset of strategic importance

SUMMARY

- **Increasing global demand for Tungsten**
- **Limited growth forecast in worldwide primary supply**
- **China tightening control of its domestic Tungsten Industry**
- **China reducing tungsten exports to Rest of World (RoW)**
- **China increasing imports of tungsten concentrates**
- **RoW likely to have significant shortages of tungsten by 2012**
- **Companies holding large tungsten resources located within the Western World will hold a strategic position**