

WE MINE FOR
PROGRESS



Melbourne Mining Club

Right Time, Right Business, Right Model

12 October 2017



Providing efficient,
low carbon energy

- U**
- Nd** Neodymium
- Fe** Iron
- B** Boron
- Dy** Dysprosium

Neodymium, iron, boron and dysprosium are used in the permanent magnet generators that many wind turbines now employ.



Cu Copper

Wind turbines can use between 400kg to 4 tonnes of copper per turbine depending on the technology used.

- Pb** Lead
- Li** Lithium
- Ni** Nickel
- Na** Sodium



Battery energy storage supports the integration of renewables and stabilization of the electricity grid, based on lead, lithium, nickel or sodium technologies.

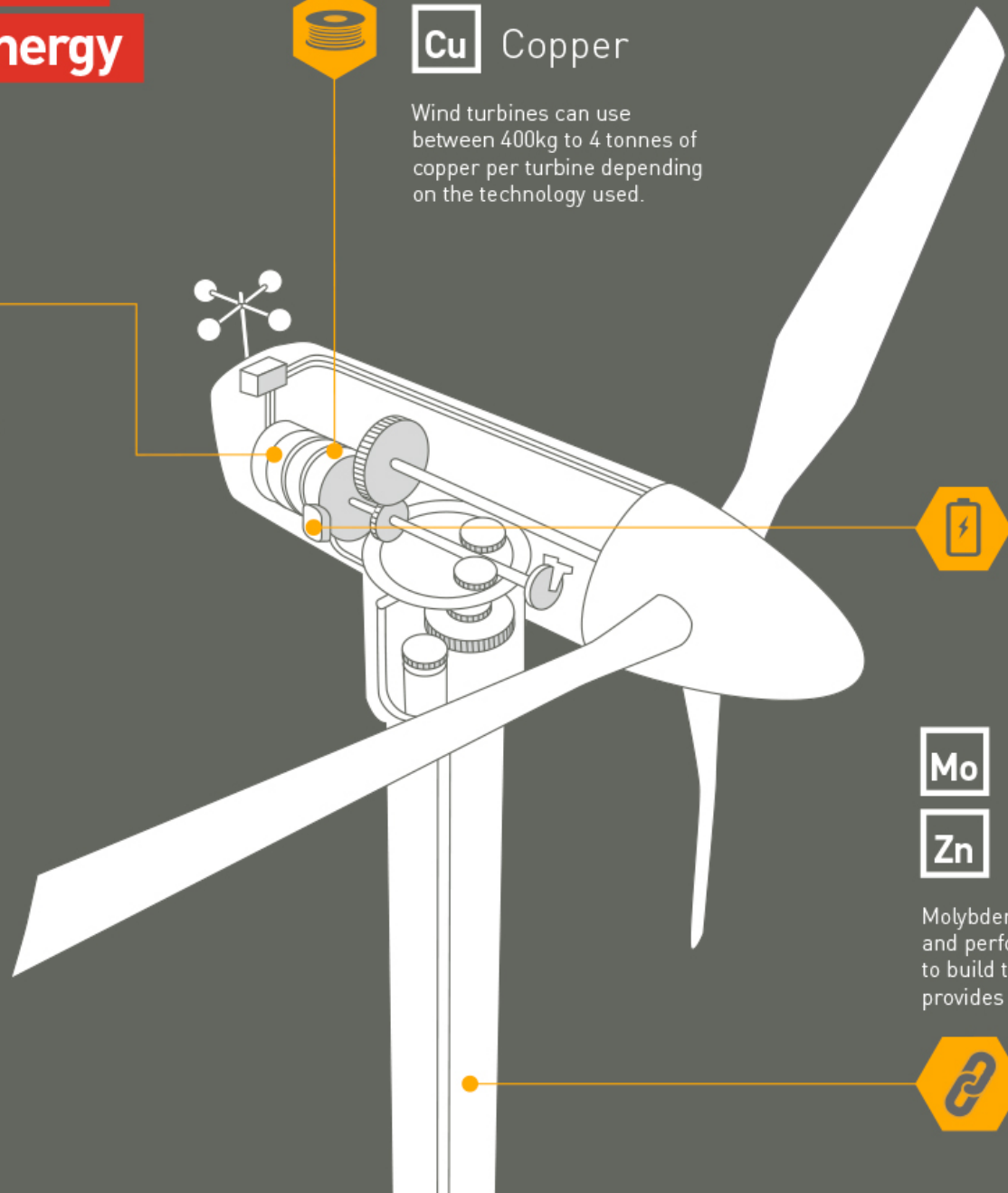


Mo Molybdenum



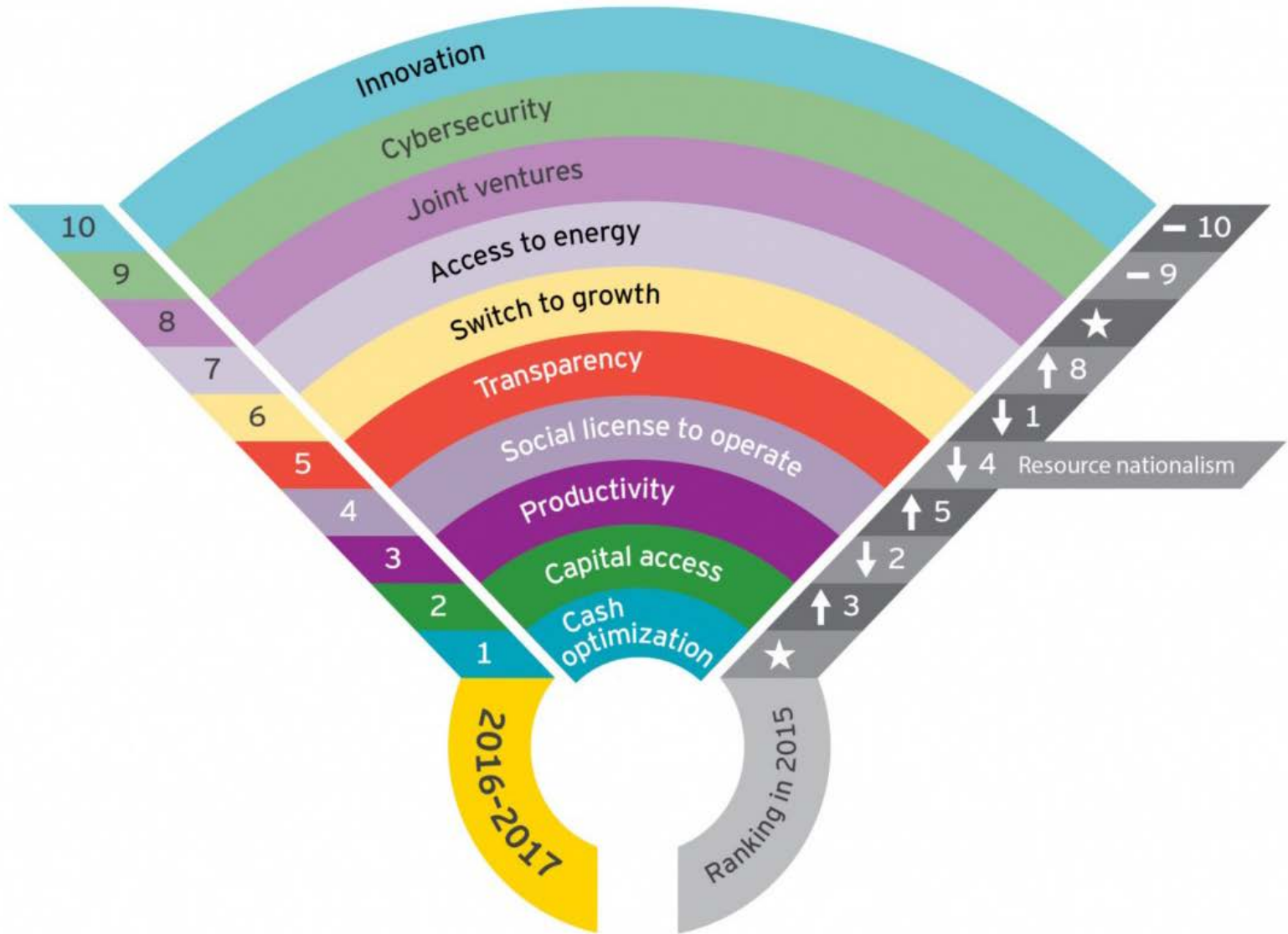
Zn Zinc

Molybdenum and zinc enhance the longevity and performance of the high-tech steel used to build the tower. Thermally-sprayed zinc provides over 20 years of corrosion protection.





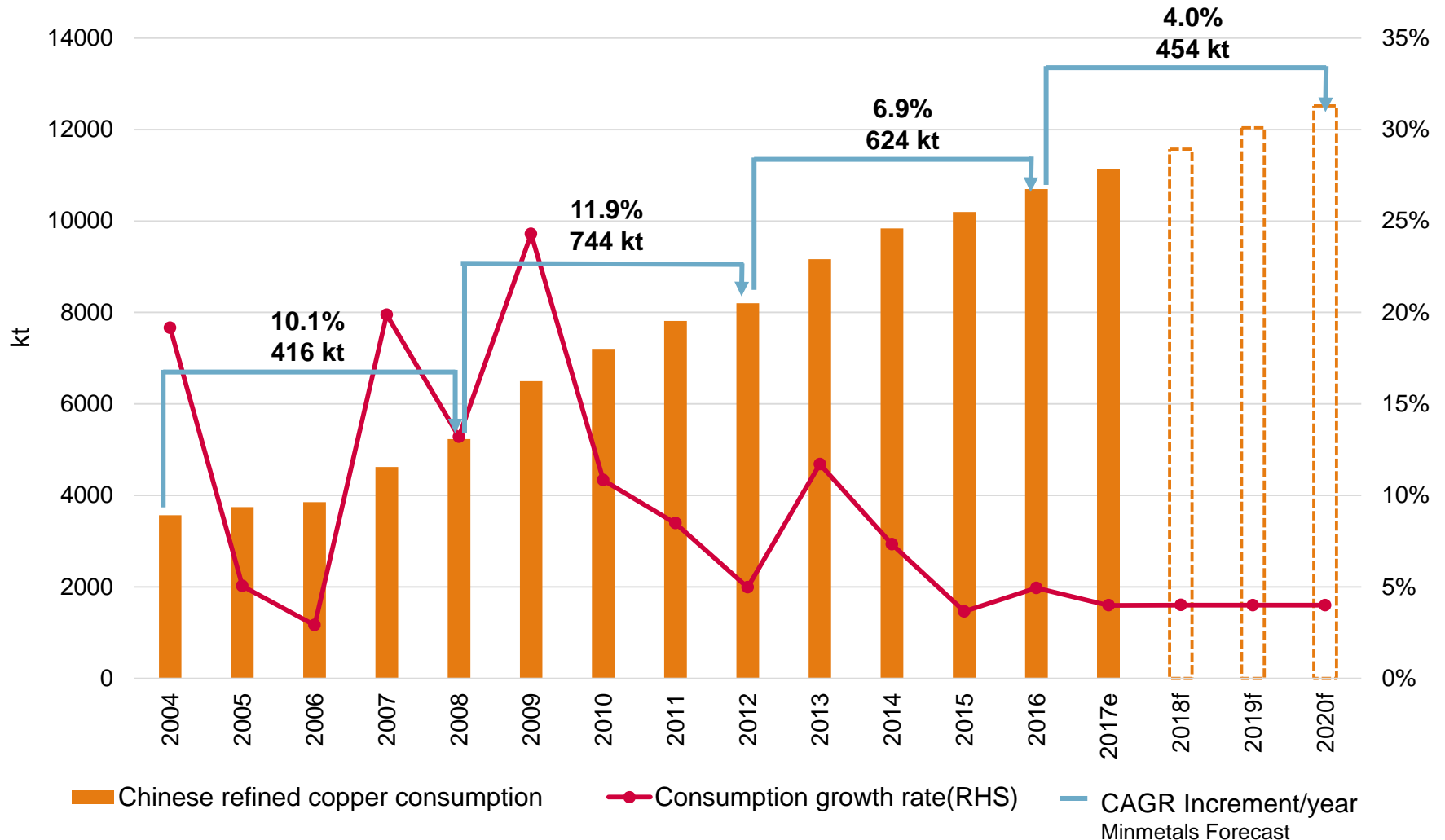
TOP 10 BUSINESS RISKS FACING MINING AND METALS 2016-2017



↑ Up from 2015 ↓ Down from 2015 - Same as 2015 ★ New to the radar

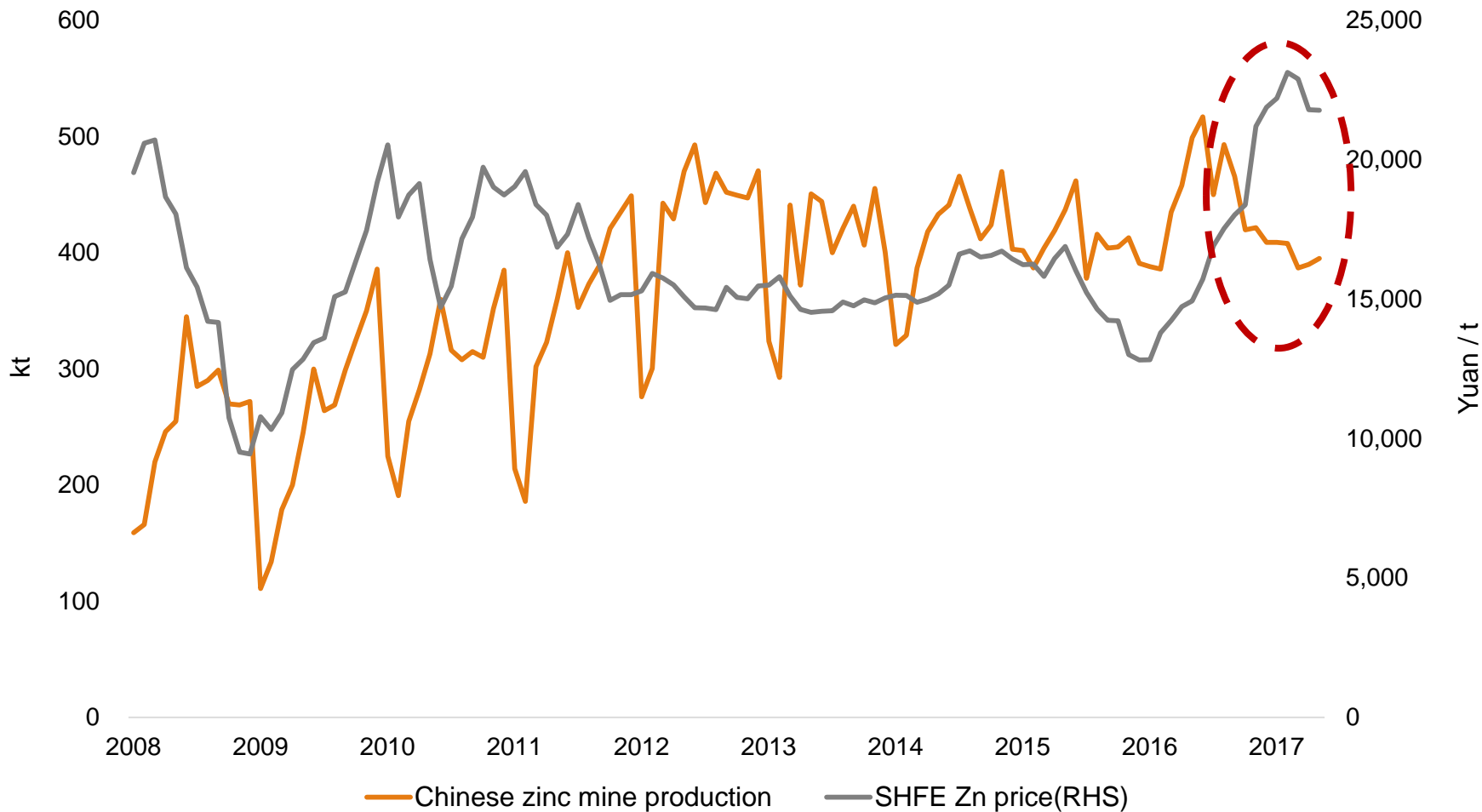
One Las Bambas is needed every year even if Chinese copper demand grows at a lower rate

2004-2020 CHINESE REFINED COPPER CONSUMPTION



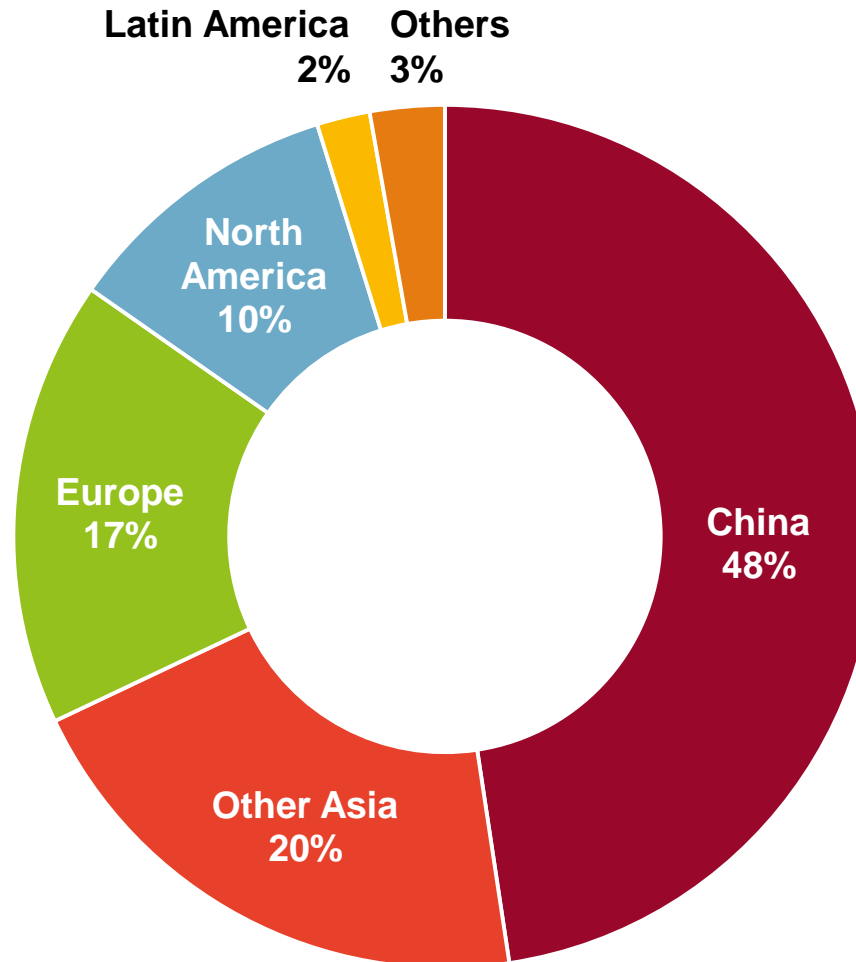
Zinc supply constrained by Chinese environmental protection, strategic shift

CHINESE ZINC MINE PRODUCTION AND ZINC PRICE IN RMB



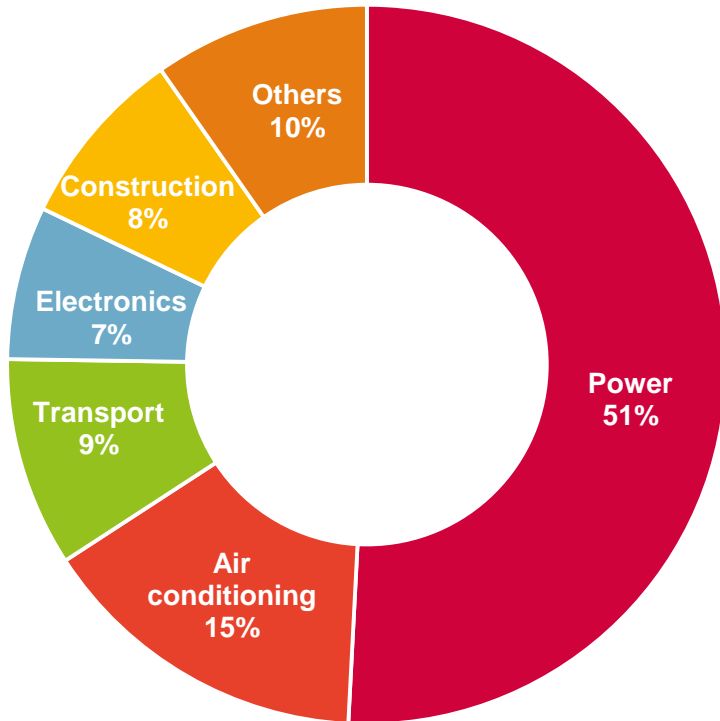
China consumes almost half the world's copper

2016 REFINED COPPER CONSUMPTION SHARE BY REGION

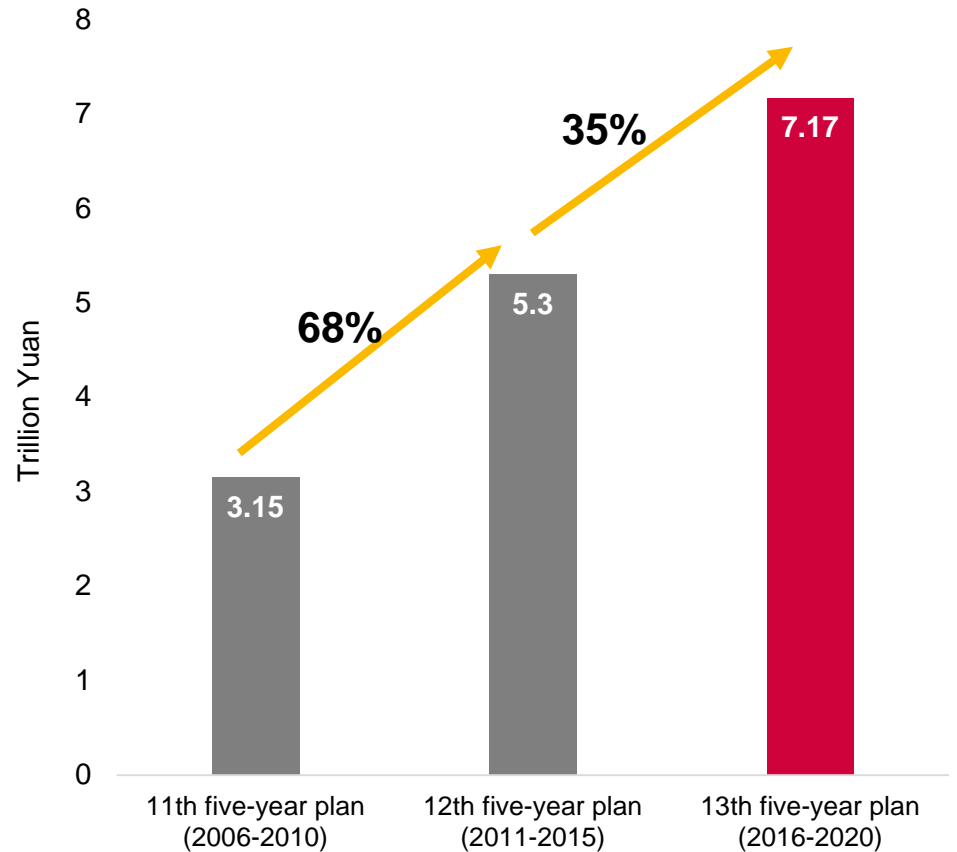


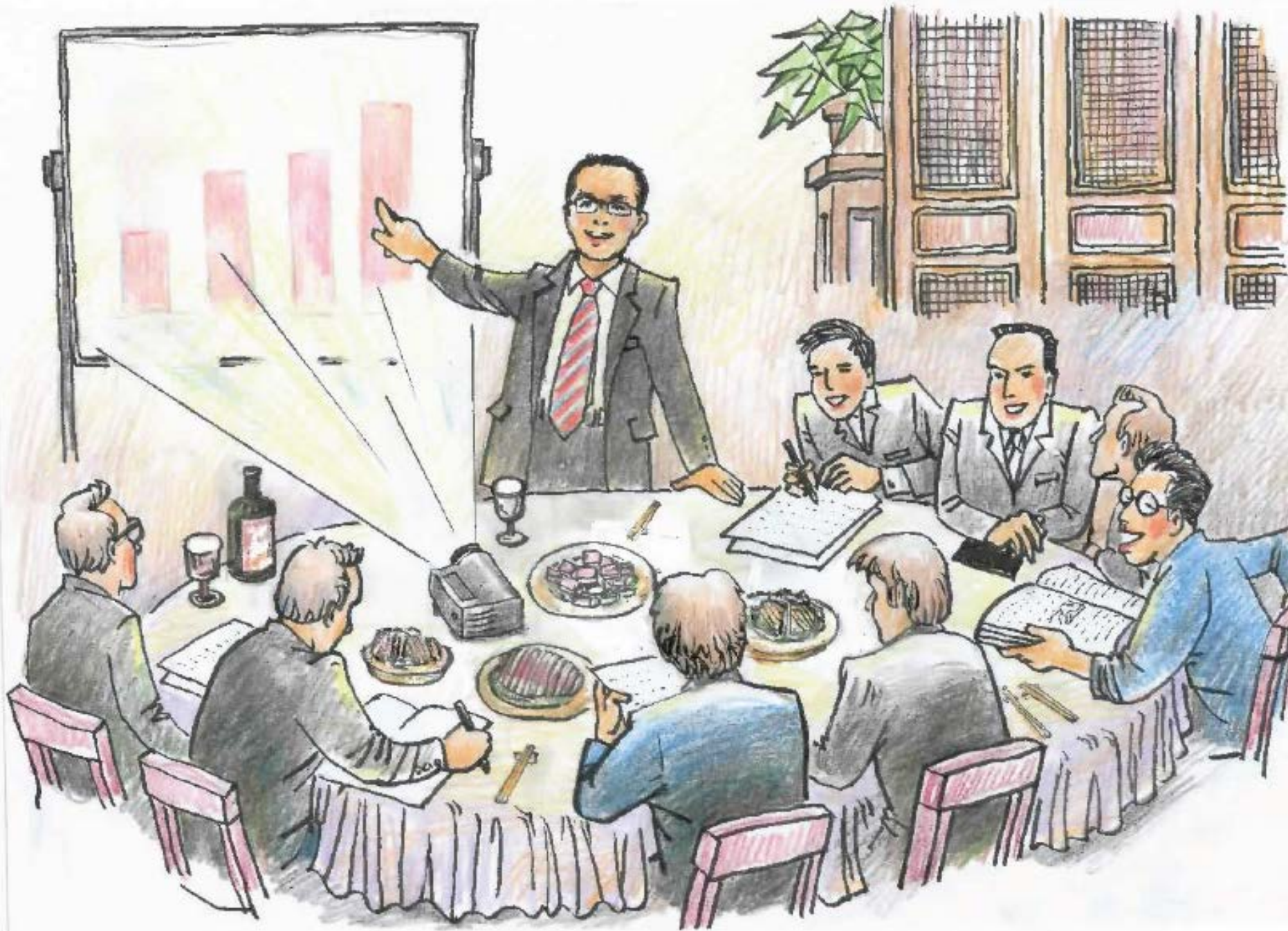
The Chinese power sector is the major driver for copper consumption – with a long way to run

2016 CHINA END-USE COPPER DEMAND

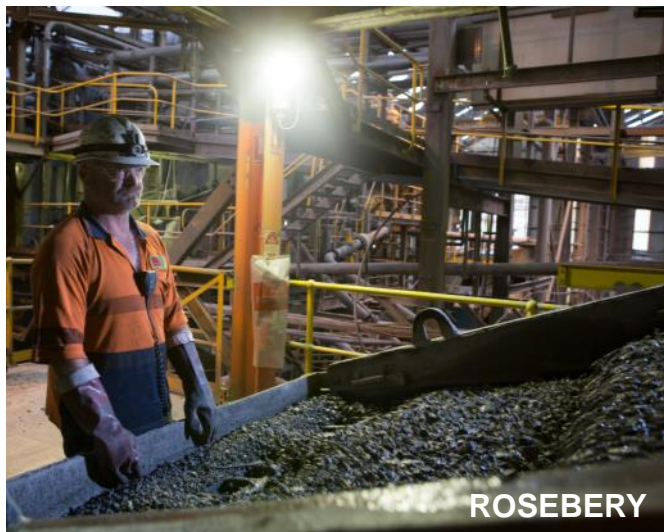


CHINESE INVESTMENT PLAN IN POWER INDUSTRY





Introducing MMG Limited



Las Bambas Mine, Apurimac, Peru

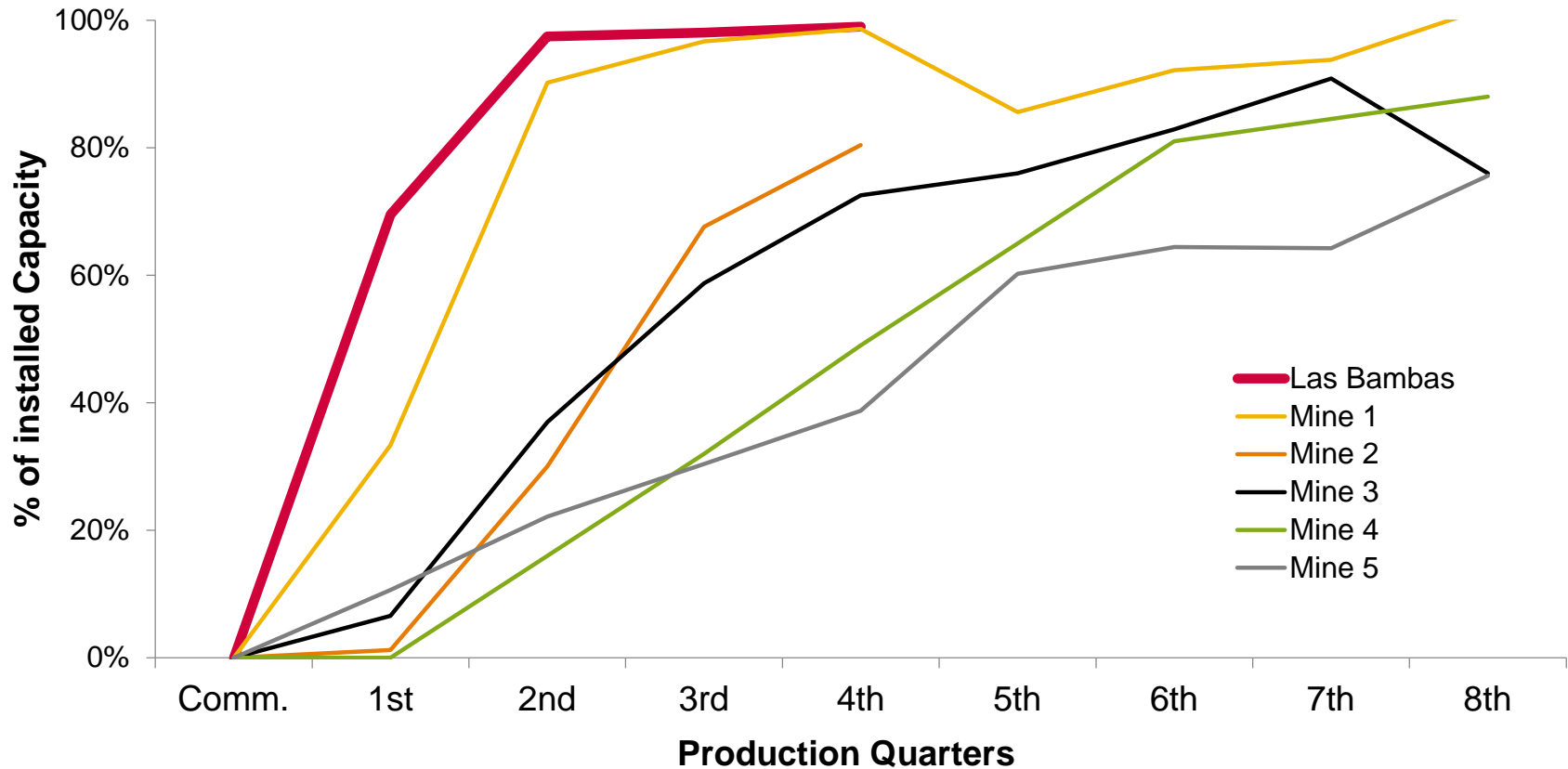


Nueva Fuerabamba Community



Operational excellence – ramp up benchmark

RAMP UP PROFILES OF SIMILAR¹ GREENFIELD COPPER CONCENTRATORS



¹ Includes recently developed (since 2014) greenfield-type copper concentrator projects, publicly available data

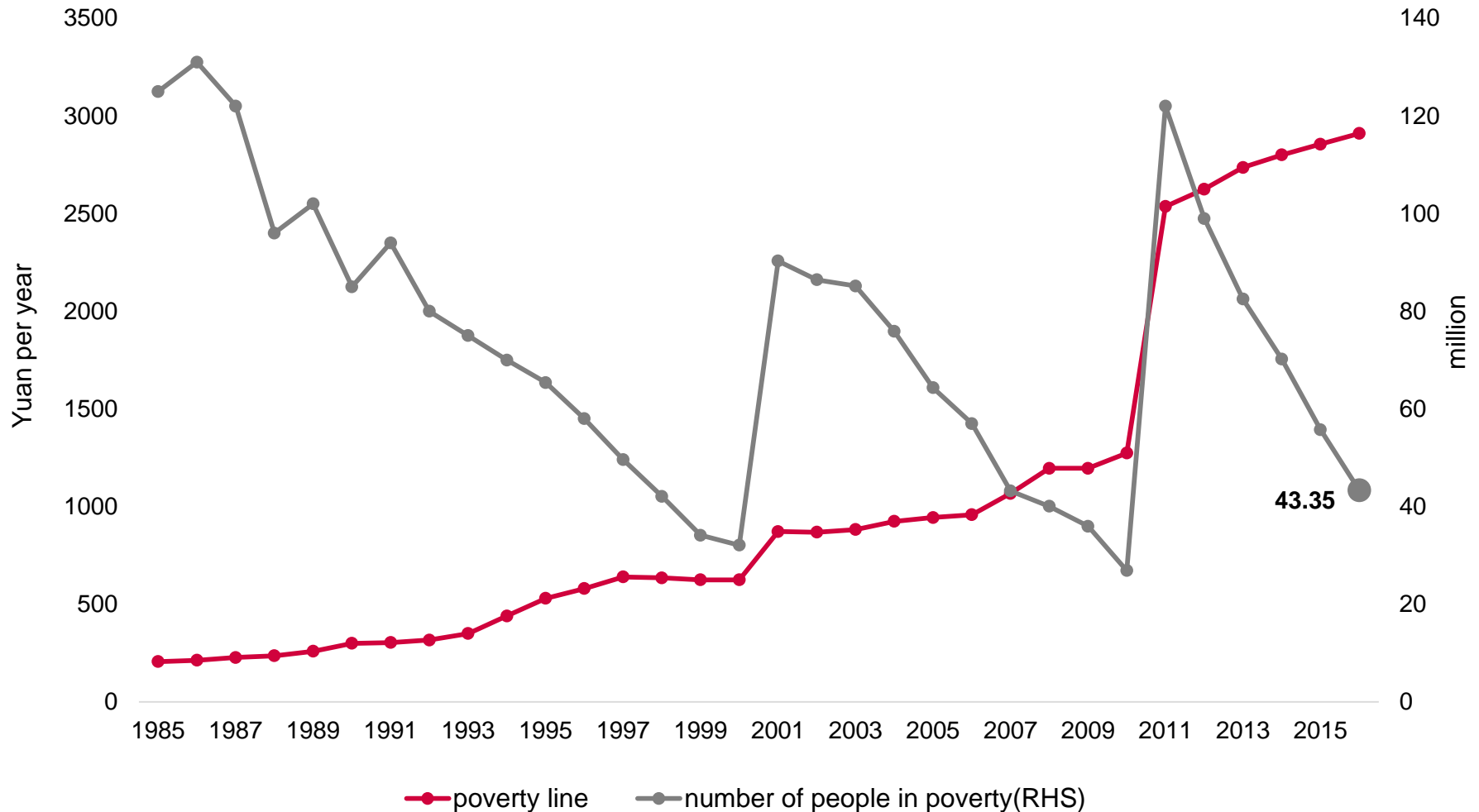
Dugald River Project, Cloncurry, Queensland



China promises to reduce poverty by 10 million people each year, adding new purchasing power

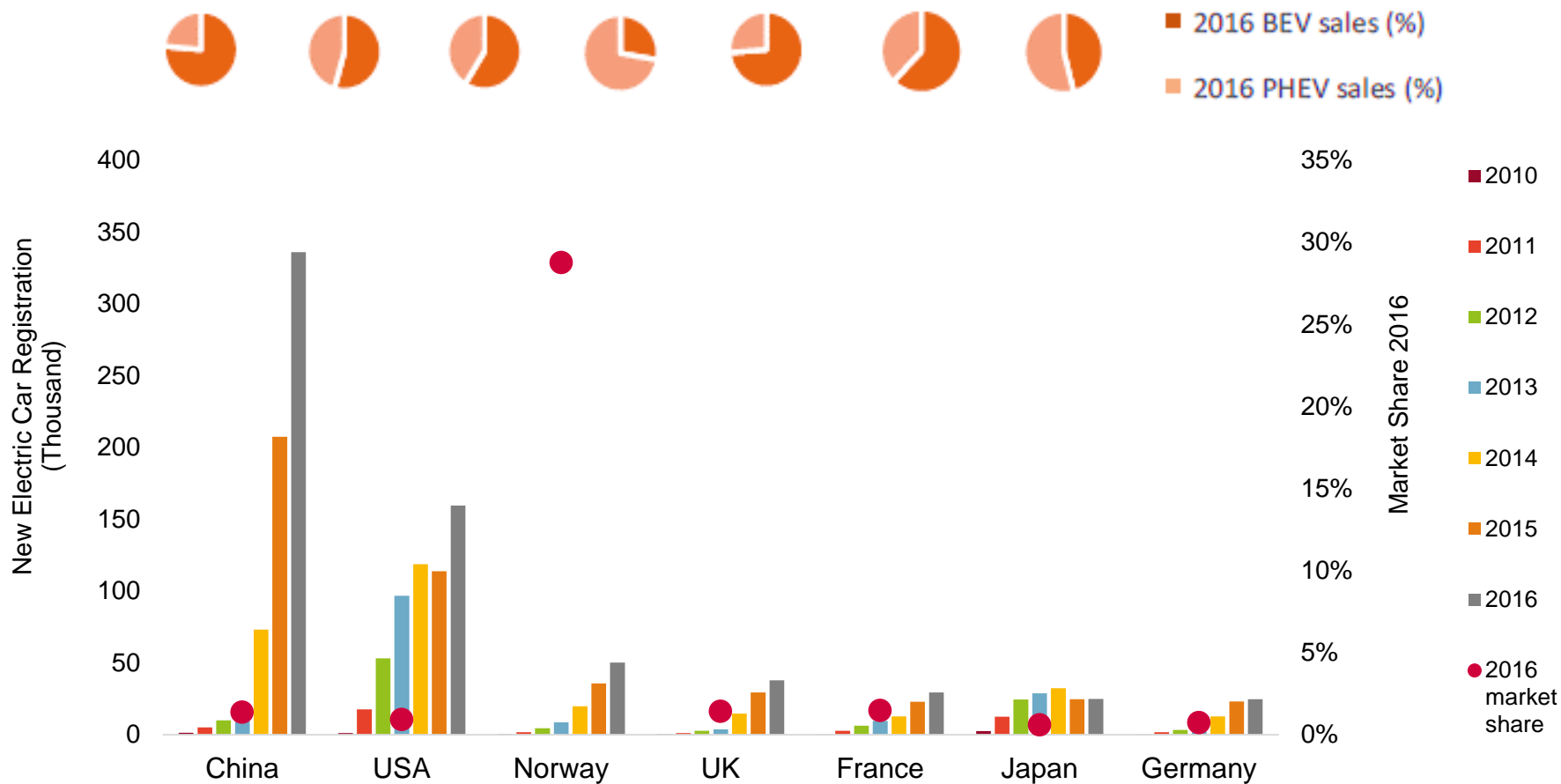


NUMBER OF PEOPLE IN POVERTY IN CHINA

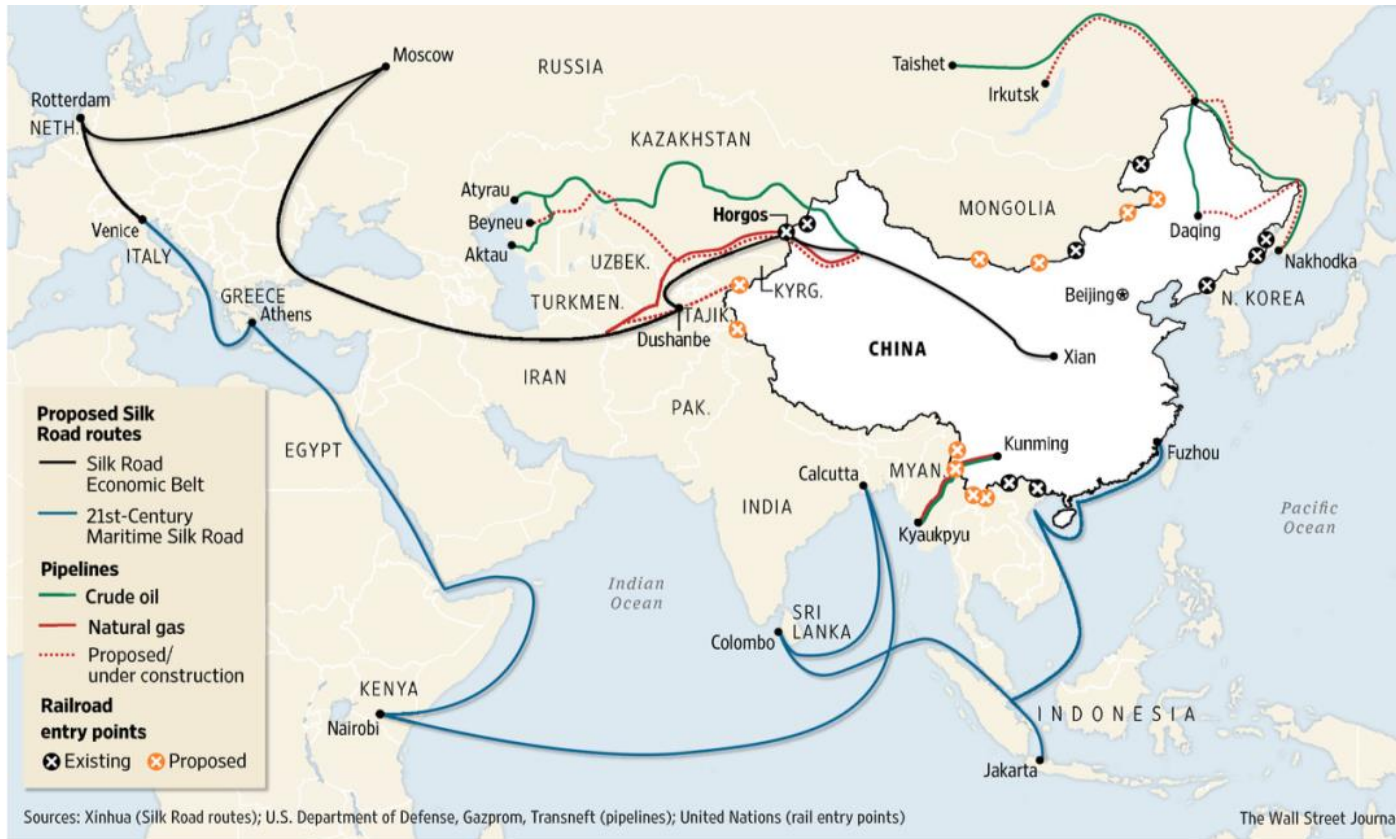


China has strong ambition on electric vehicles and will lead global EV consumption

ELECTRIC VEHICLE (EV) SALES, MARKET SHARE, AND BEV AND PHEV SALES SHARES IN SELECTED COUNTRIES, 2010-16



'One belt, one road' initiative



Related countries and regions
65



Involved population
4.4 billion
(63% of the world)

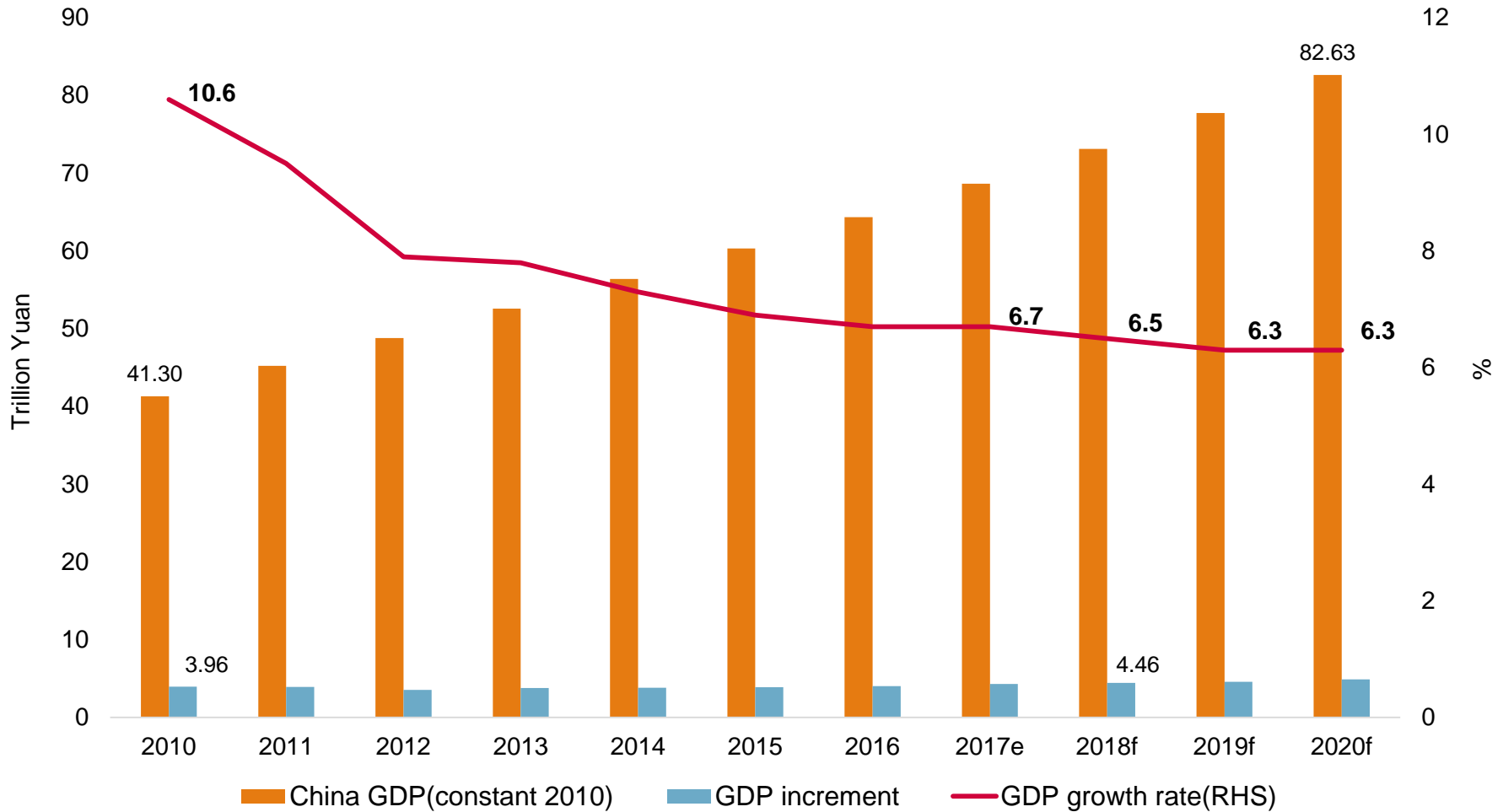


Scale of economy
21 trillion
(29% of the world)



The average GDP growth rate in 2017-2020 needs to be 6.5% to meet the goal of doubling China's GDP from 2010

CHINA'S GDP AND GROWTH RATE







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