China’s coal conundrum

What could enable an earlier coal and CO_2 peak?

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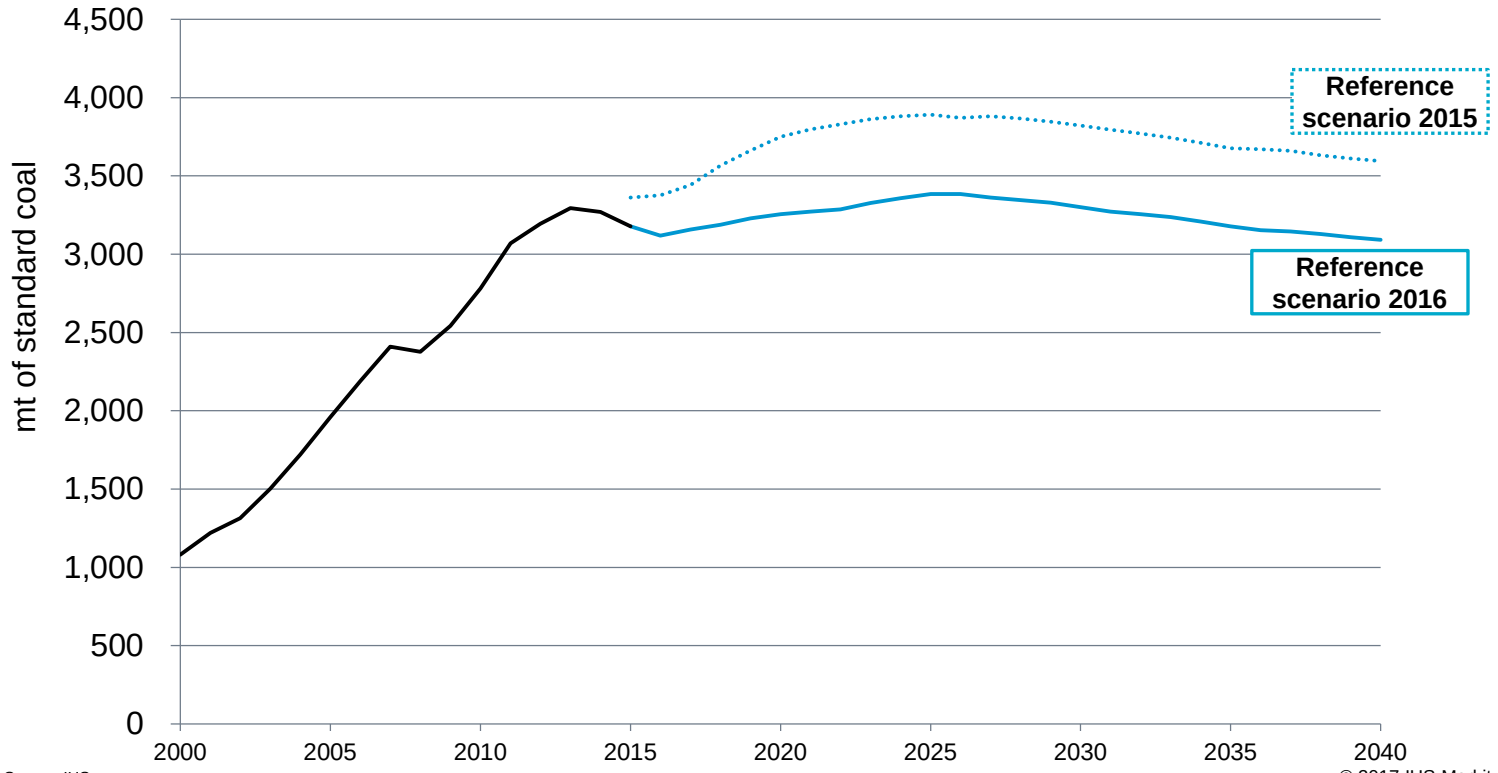
Key Implications

- Given current policies and investment trends, IHS expects that Chinese carbon emissions will peak before 2030, even with increasing investment in coal-fired power and coal-conversion sectors.
- The economic transition away from heavy manufacturing the past few years means that the carbon peak could come earlier and at a lower level than previously thought.
- In addition to economic growth, government policies (e.g., further environmental mandates) and market factors (e.g., cost competitiveness of alternative fuels and technologies) will also be critical for the future of coal – and thus any coal conversion projects.

IHS long-term scenario outlooks

Coal demand trajectory came down significantly between 2015 and 2016 outlooks

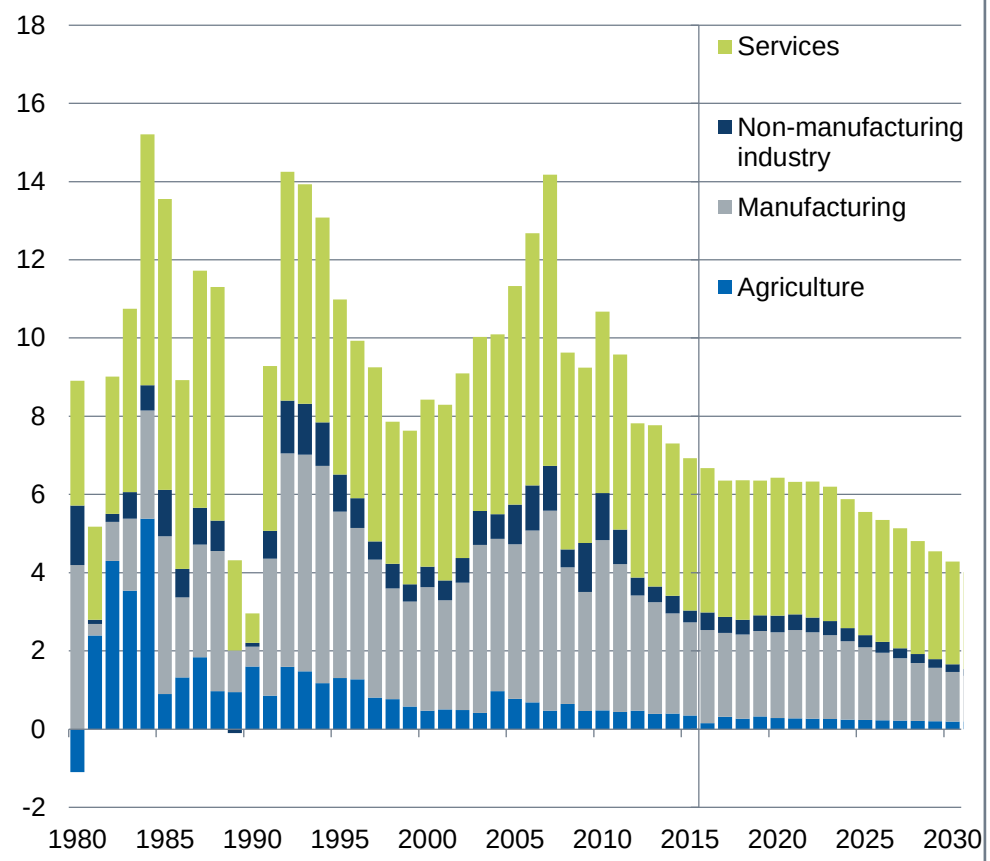
China: Coal consumption outlook



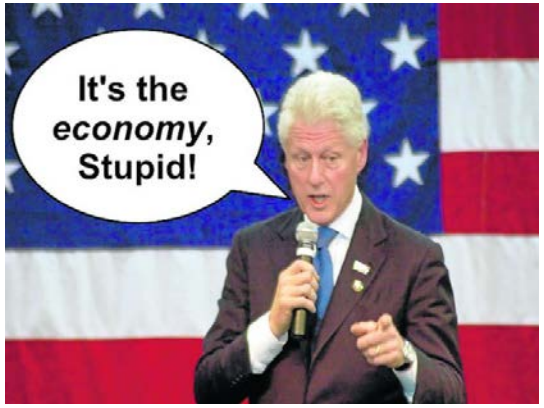
Source: IHS

Why the substantial drop in 2016 outlooks?

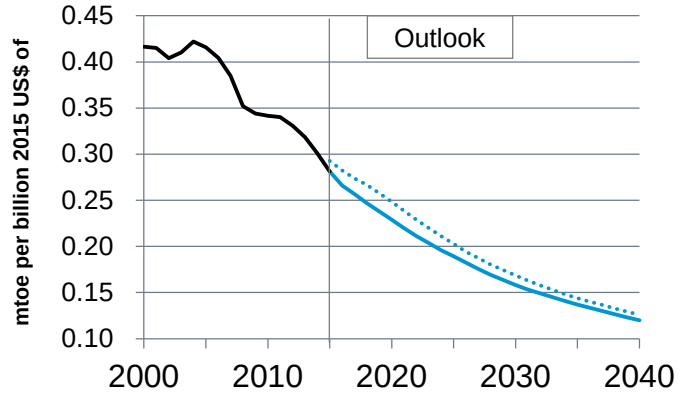
China's real GDP growth (%) and its components



Source: IHS



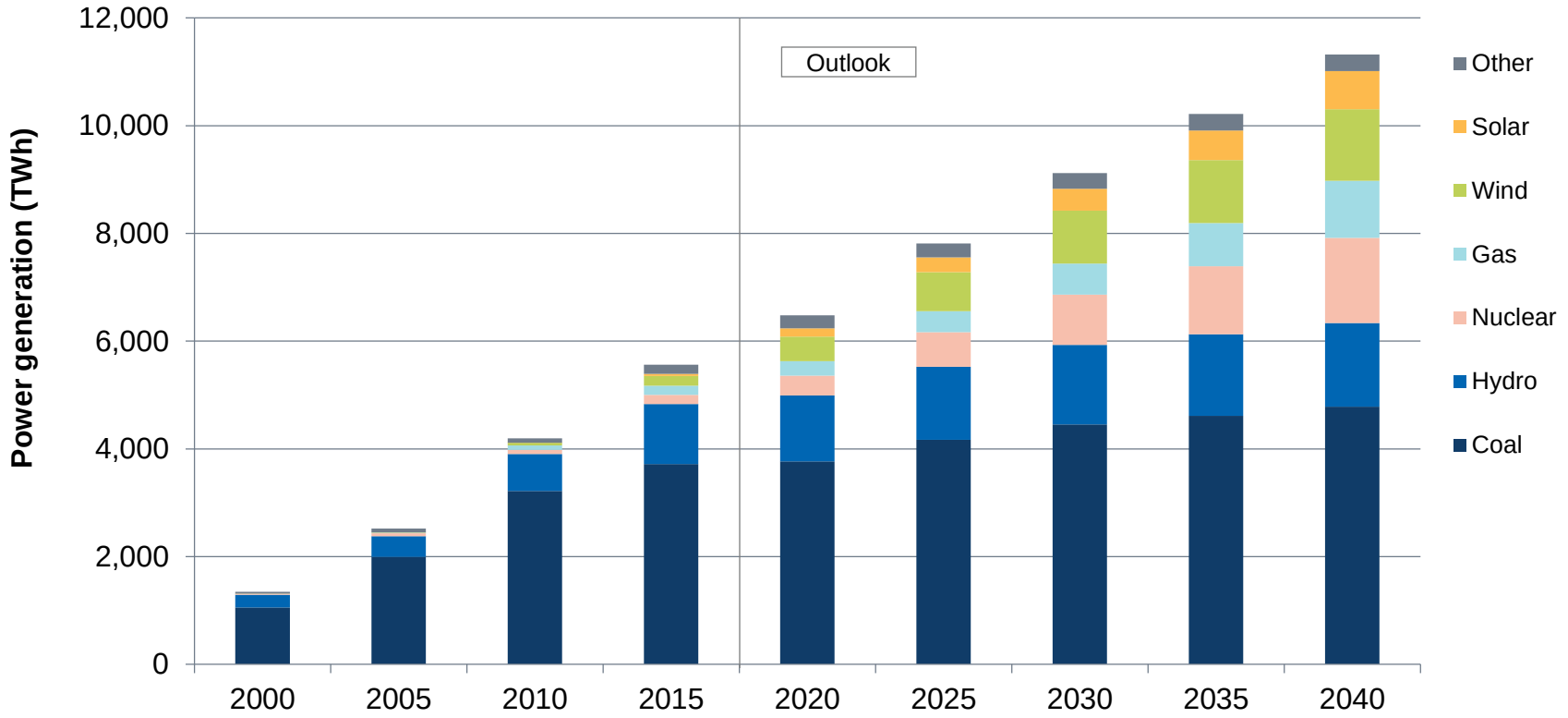
Energy intensity of the Chinese economy



Source: IHS

Renewables and gas played a role too, but coal-fired power continues to grow

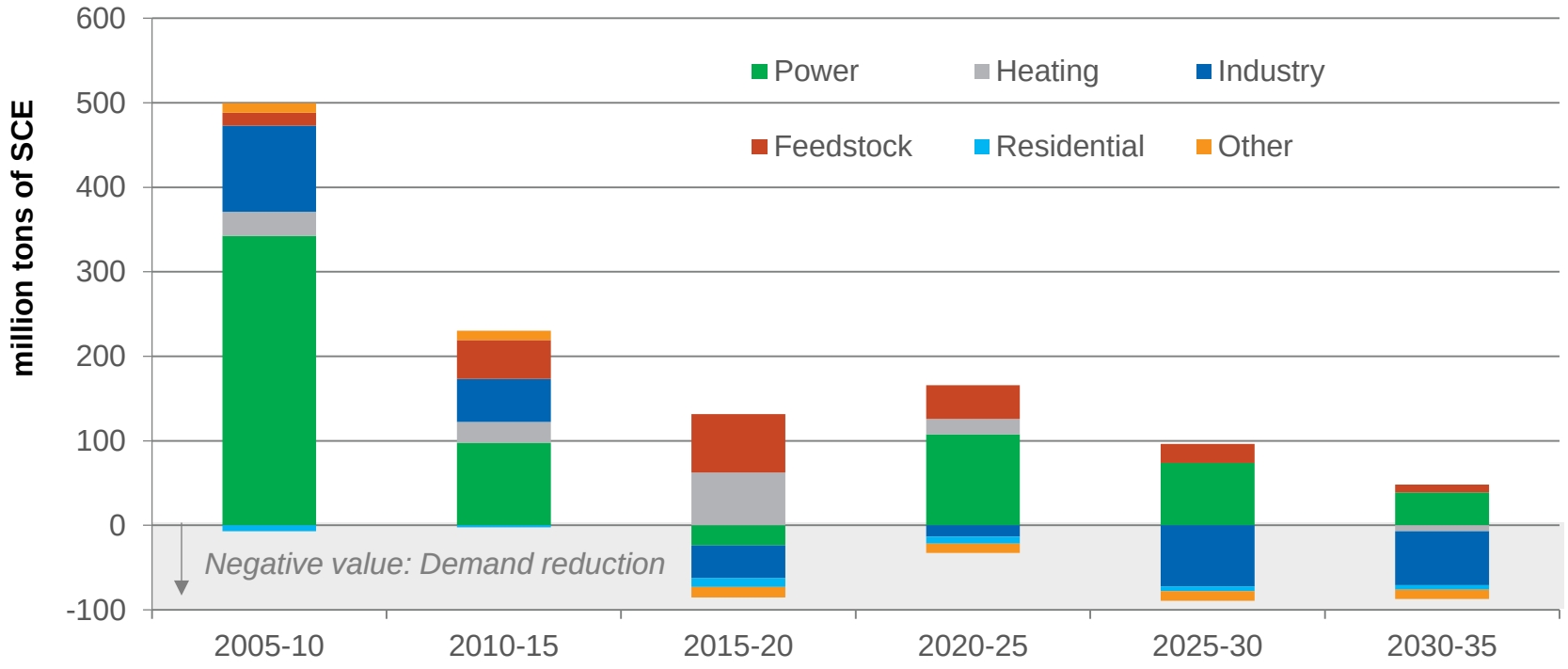
China power generation outlooks (Reference scenario 2016)



Source: IHS

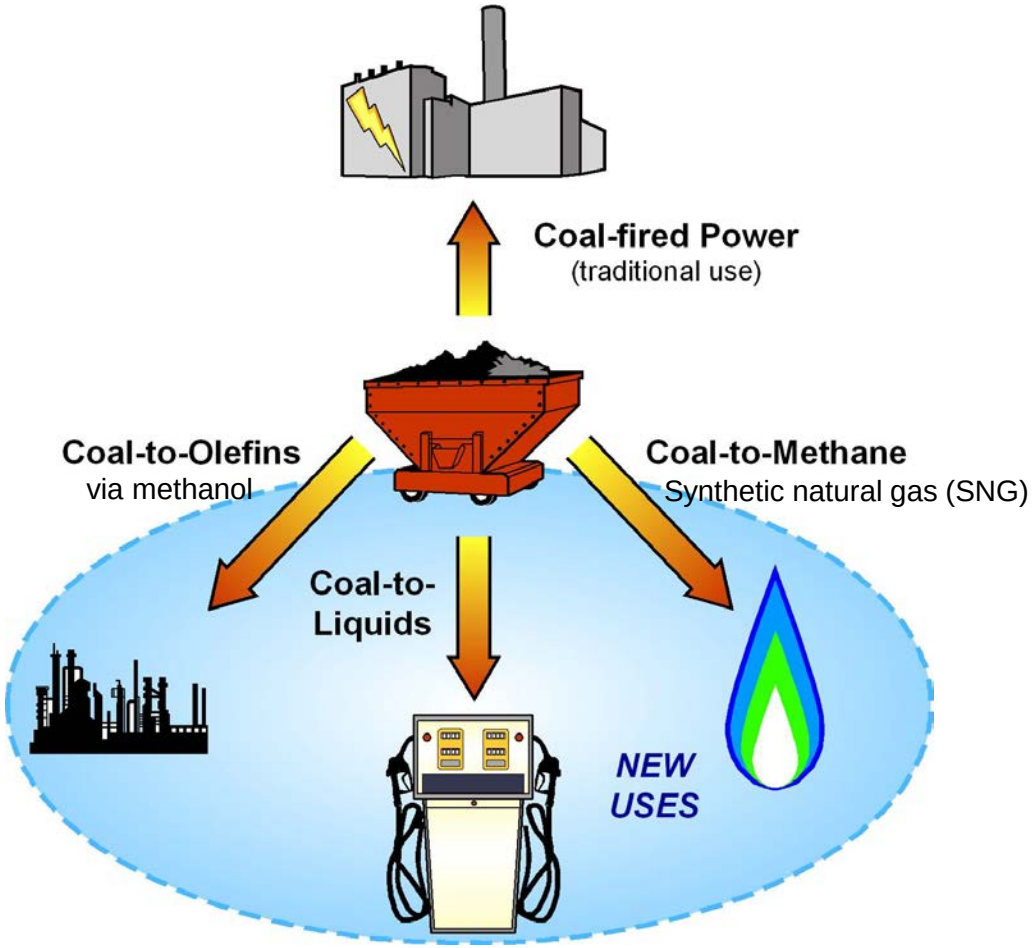
Power/heating and feedstock are the main sectors for future coal consumption growth in China

Incremental thermal coal consumption in China



Source: IHS Markit

Coal as a feedstock: the most versatile fuel



Source: IHS Markit
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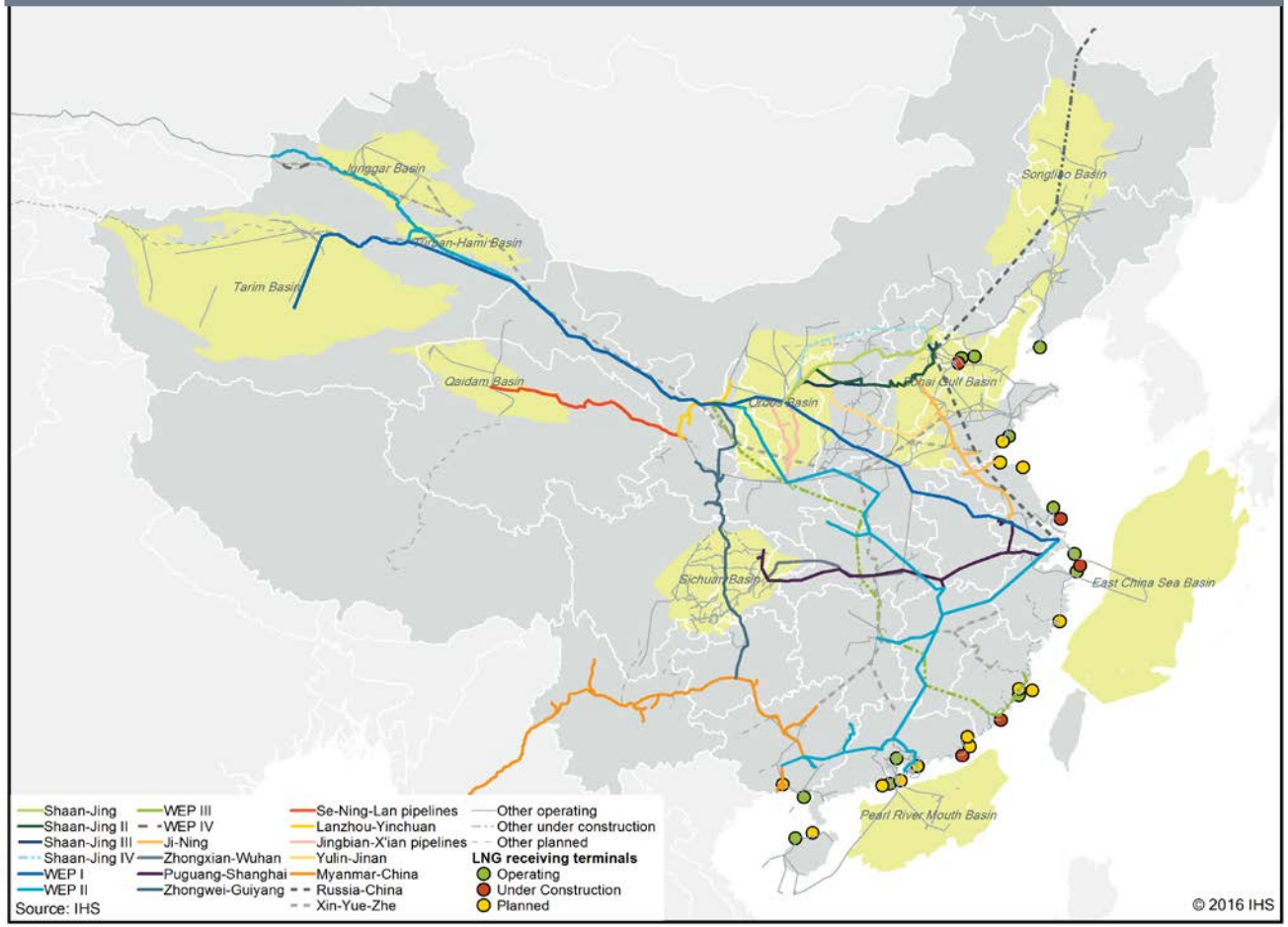
Where does coal-to-methane fit in China's gas supply?

Multiple gas supply sources competing for China's gas market

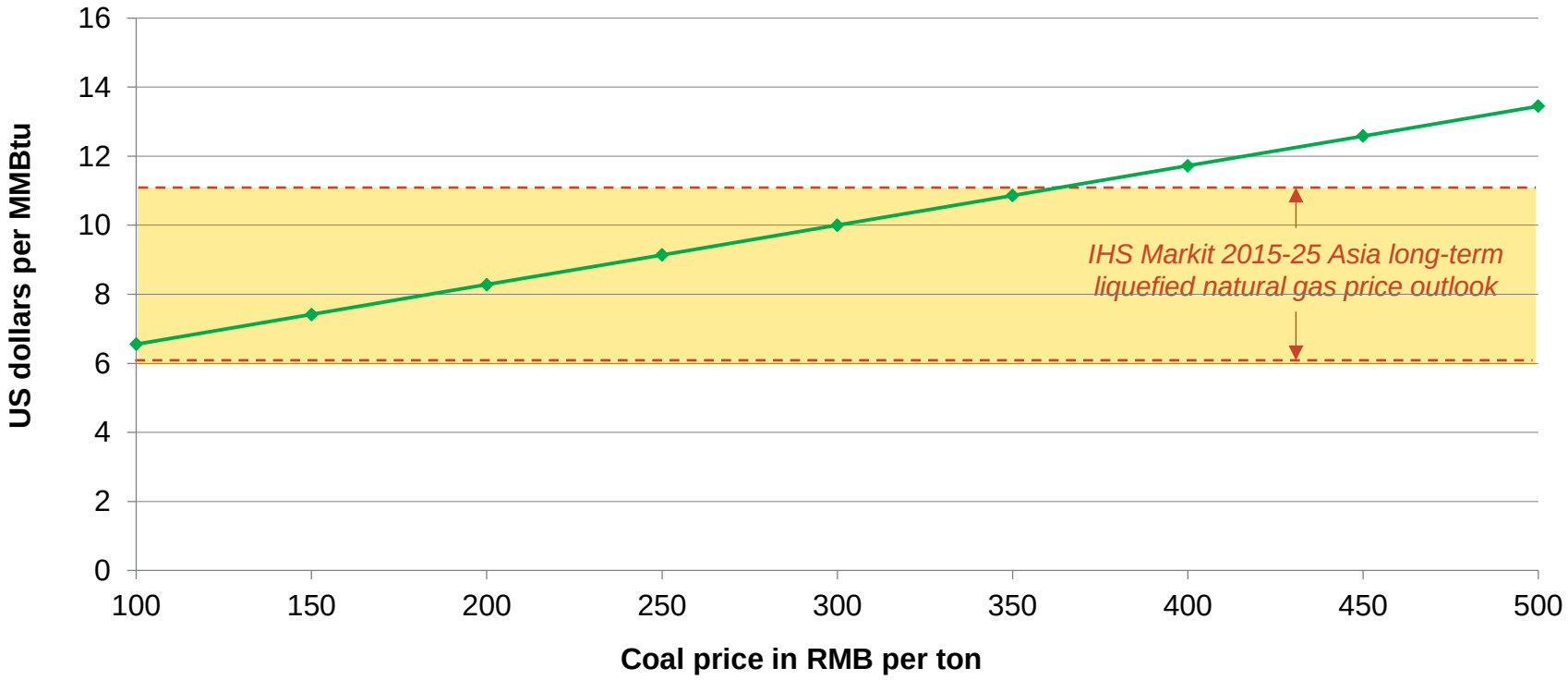
China's natural gas supply system



How do energy companies examine their supply strategies?

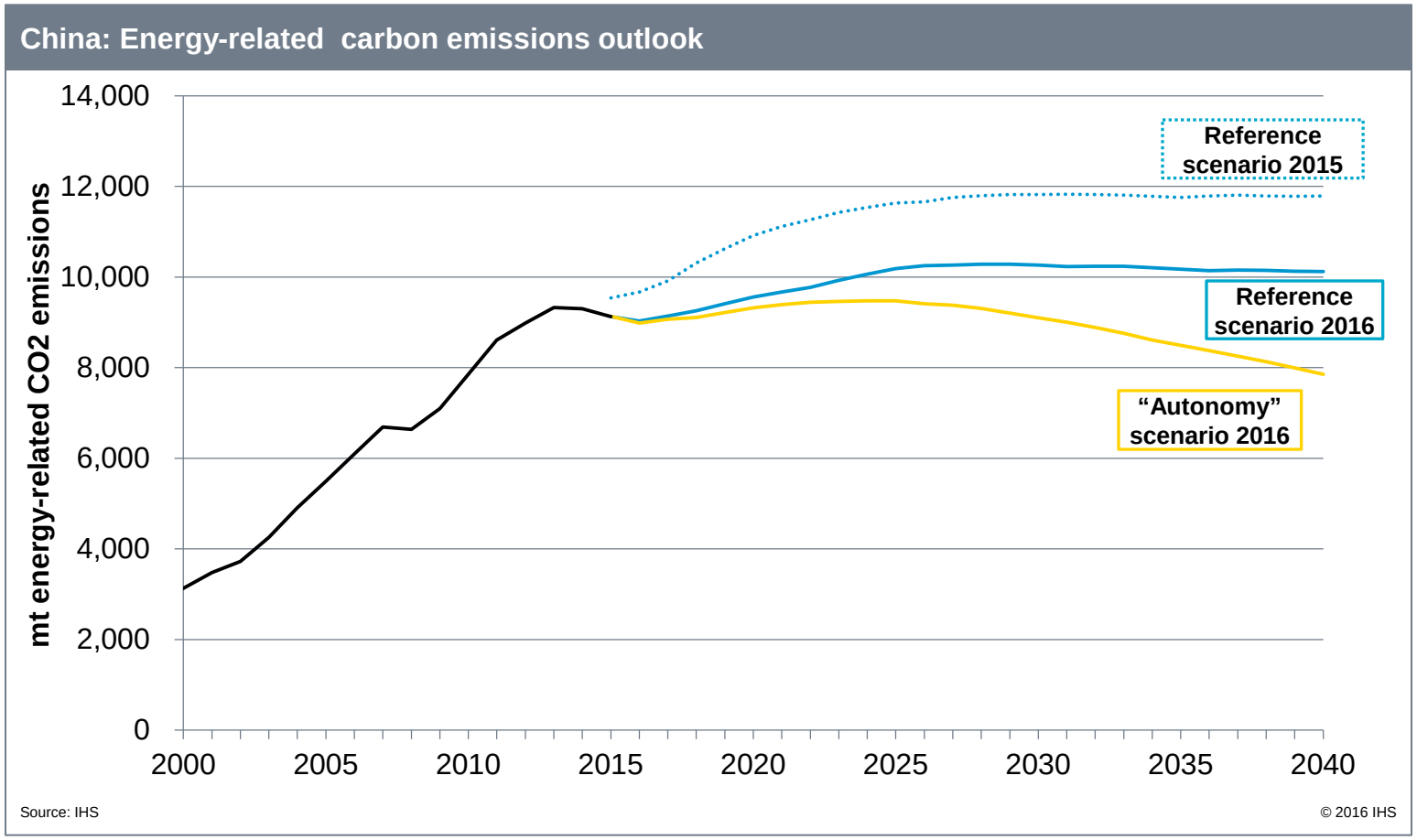
Will coal-based SNG be economically competitive

SNG production cost vs coal price



Note: Assume 75% utilization rate. Coal prices are based on lignite 3800 kcal.
Source: IHS Markit

Current policies will enable China's reach its COP21 commitments, but deeper cuts are possible



Summary of key implications

- **2030 peak carbon is very much achievable for China**, even with higher coal usage in the power and coal conversion sectors.
- **Economic restructuring is key to lowering coal consumption,** and any changes in the restructuring will alter future carbon trajectory.
- **Environmental policies and market factors will determine the future of coal conversion.** More regional coal ban? Future fossil fuel prices?

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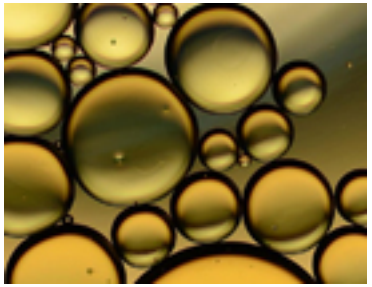

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