



China's Energy Supply Crunch

Can we avoid a painful transition in China – and beyond?

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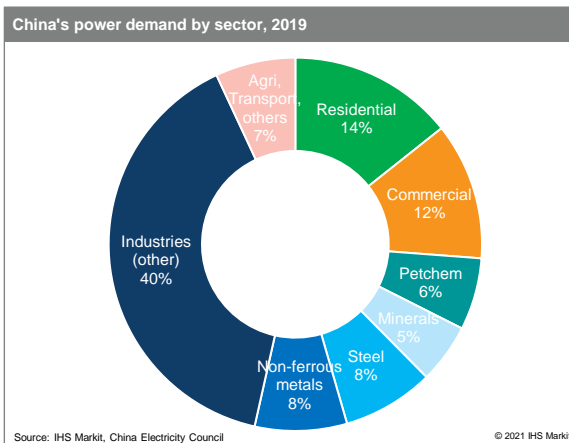
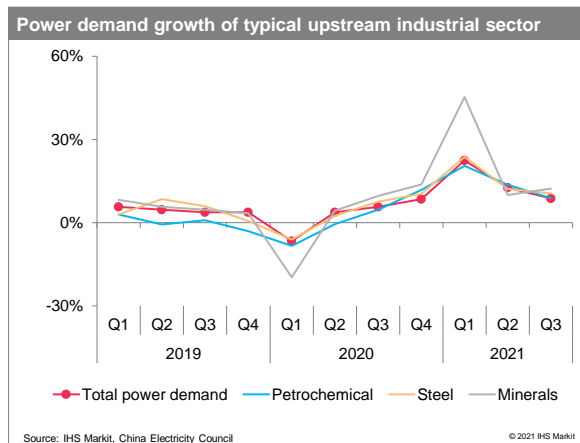
The current power crunch

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Power crunch: Strong power demand rebound, led by industries

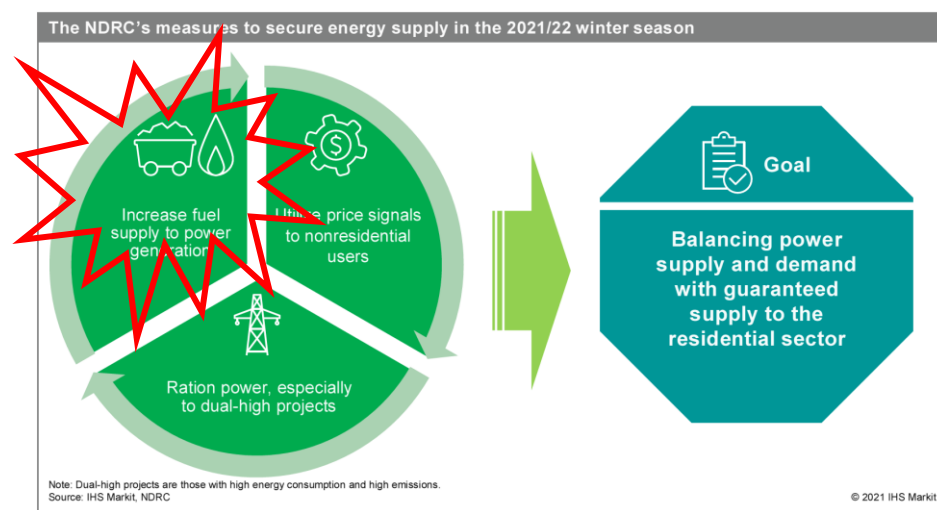
China's electric power demand continues to be dominated by industries, especially heavy industries



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Government proposes three measures, with the goal of securing energy supply in livelihoods sectors



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Those measures are in fact very much in line with the 14th Five-Year Plan outline issued in 2020

Announced policy directions/targets for 14th FYP thus far



Peak carbon emissions before 2030 and carbon neutrality by 2060



“Cap/ intensity dual control” in energy consumption and carbon emissions

- 13.5% reduction in energy intensity
- 18% reduction in carbon emissions intensity



Secure energy supply

- Clean and efficient use of coal
- Emphasize domestic oil and gas production and storage, and diversifying supply



Market mechanism and cost reduction

- Establishment of carbon trading market
- Continued energy market reform



Develop clean energy

- 20% non-fossil fuel in primary energy use
- Construction of integrated clean energy base
- Installed nuclear capacity to reach 70 GW



Strengthen pollution control

- Reduce heavily polluted days
- Clean up highly polluted water bodies by 2025

Note: A heavily polluted day is when the Air Quality Index is above 200.

Source: IHS Markit

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What does this mean for climate policies?

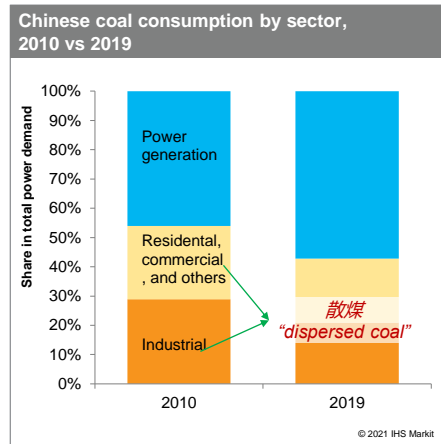
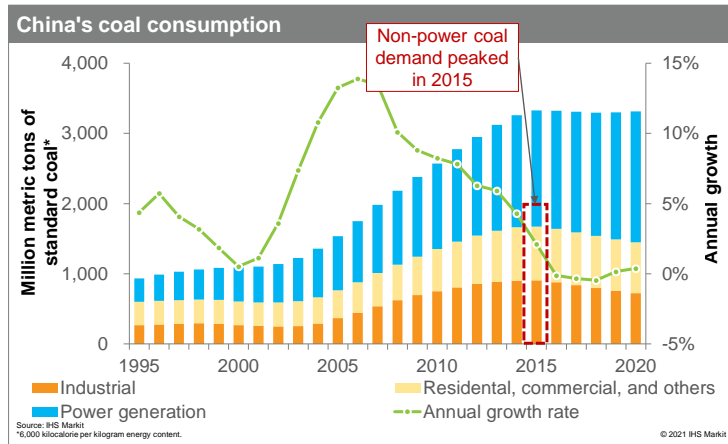
i.e., Will China be able to reach peak coal / peak CO₂ before 2030?

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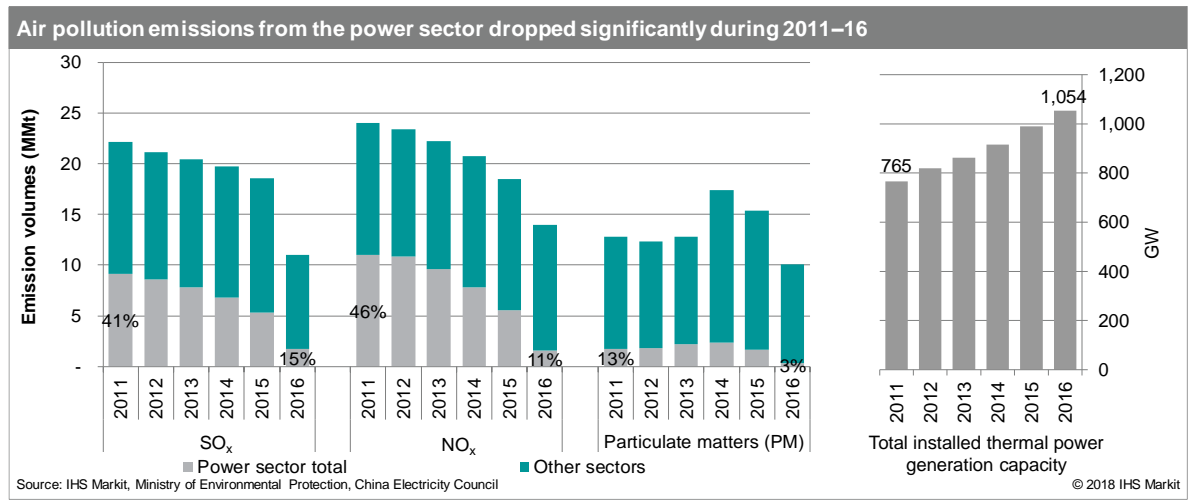
Peak coal demand ≠ Peak coal-fired power

Technically, coal demand can peak while coal-fired power continues to expand



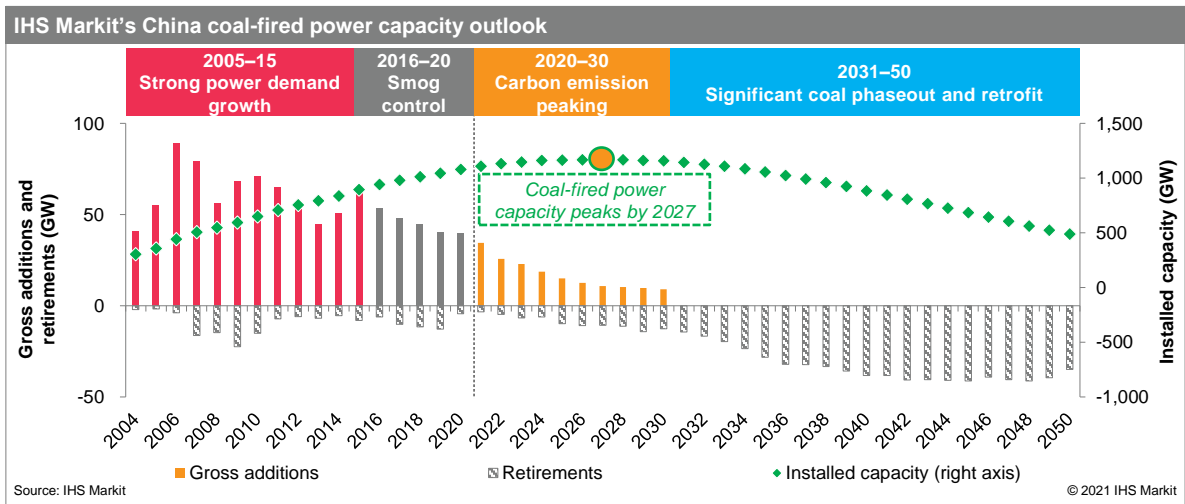
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Centralized, utility-scale coal-fired power plants have significantly reduced their conventional pollutant emissions during a 2012-16 campaign



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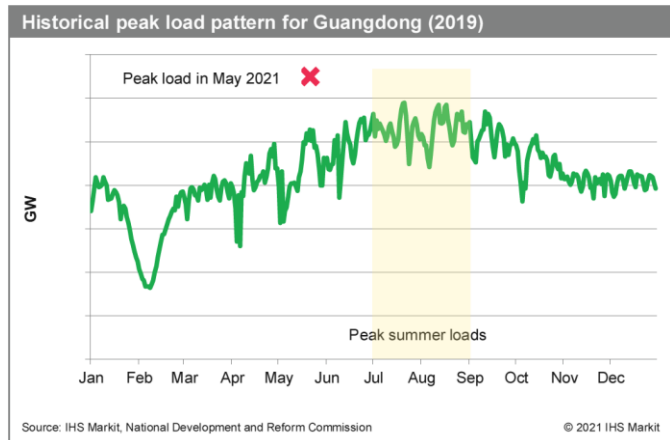
How much more can coal-fired power expand in China without jeopardizing its climate goals?



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Having coal or gas plants doesn't mean one has to run it frequently

- Reserve capacity needs to be above and beyond forecast peak to ensure supply reliability under unexpected circumstances:
 - > Unscheduled outages
 - > Extreme weather
- Guangdong had outages this May:
 - > Demand upswing driven by economic recovery and unusually hot weather
 - > Supply shortage from low hydro flow
 - > Thermal units offline for scheduled maintenance in the spring
- Climate-related extreme weather will make reserve capacity even more important
- Storage technologies are critical



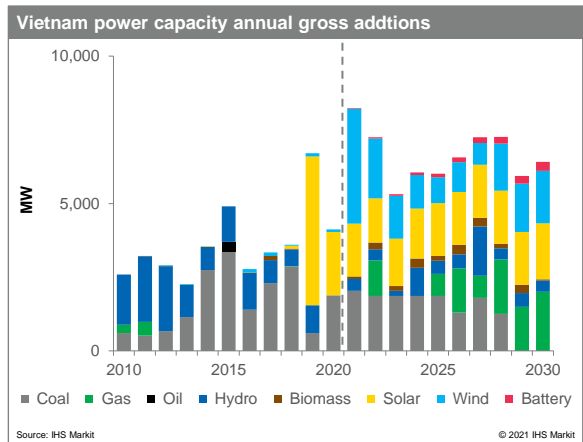
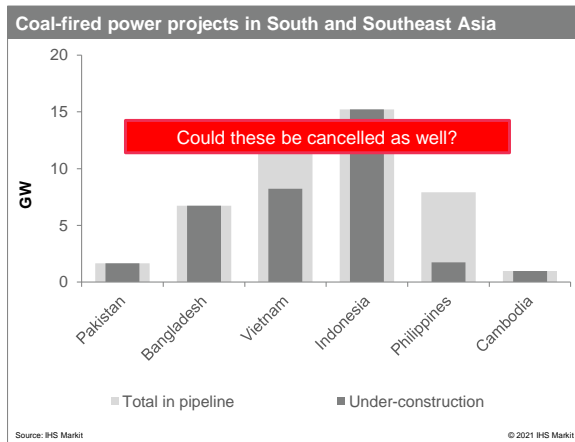
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China stops building coal plants overseas

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A long-term outcome of China's "dual control" is the migration of industries Where will industries go next?



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各省、自治区、直辖市人民政府，国务院各部委、各直属机构：

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