

Moving Towards to 2/1.5C Future Energy Transition in China

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Research Activities for AIM-China

- 2 °C pathway for China
- 1.5 °C Emission scenario for China
- MCS analysis
- Air pollution roadmap by 2050
- Non-CO2 gases for China
- 2°C Asia studies
- Stake take research projects: G20 scenarios
- No Carbon Pricing analysis
- 2+26 cities' scenario analysis
- CD-LINK
- COMMIT

论文

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Jiang Kejun(2014)Secure low-carbon development in China,
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Ke-Jun Jiang, Tamura Kentaro, Hanaoka Tatsuya (2017) Can We Go Beyond INDCs: Analysis of a Future Mitigation Possibility in China, Japan, EU and the US, Advances in Climate Change Research, May 2017, <https://doi.org/10.1016/j.accre.2017.05.005>

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HE Chenmin , JIANG Kejun, CHEN Sha, JIANG Weiyi, LIU Jia(2018) Zero CO2 Emissions for an Ultra-Large City by 2050: Case Study for Beijing, Current Opinion in Environmental Sustainability

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姜克隽(2018)一个强有力的2050碳减排目标将非常有利于中国的社会经济发展, 气候变化研究进展 An Ambitious Emission Reduction Target will Benefit Strongly for China's Social Economic Development

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Gao Ji, Jiang Kejun, Sun Kuo, Gao Junlian(2019) The Potential of Large-scale Bioenergy Production in China: A Review

China's Technology Surprising: leading the way to go to 2/1.5°C Pathway

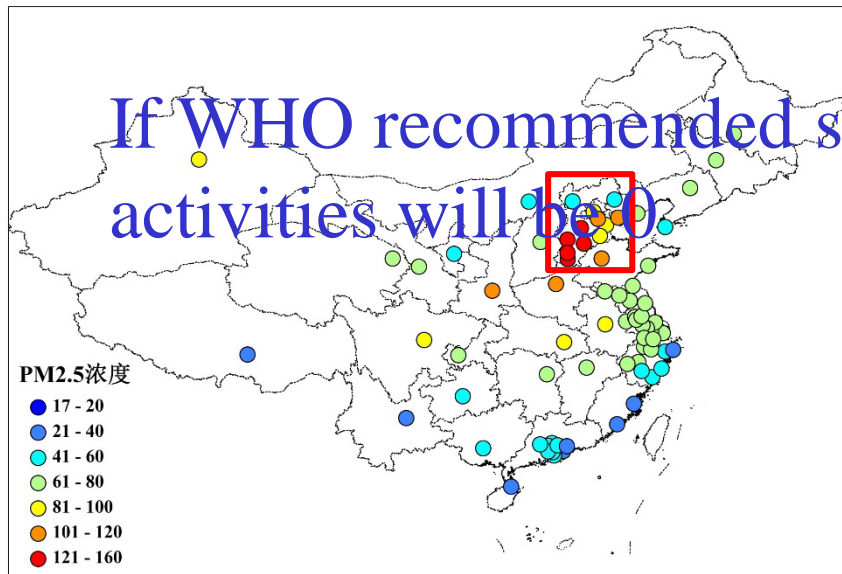
Is Carbon Pricing Still Crucial? Analysis from IPAC

An Ambitious Emission Target could increase GDP in China

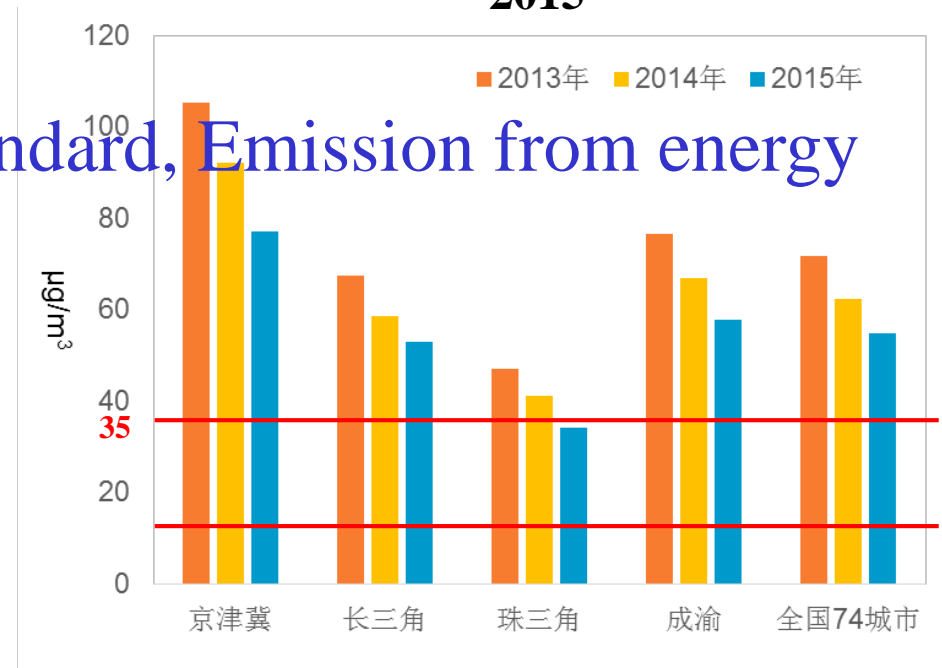
No Loser: Policy design for a 1.5C Pathway, case on Coal Industry in China

PM_{2.5} Concentration is much higher than standard

PM_{2.5} concentration of 74 cities in 2013



PM_{2.5} annual concentration from 2013-2015

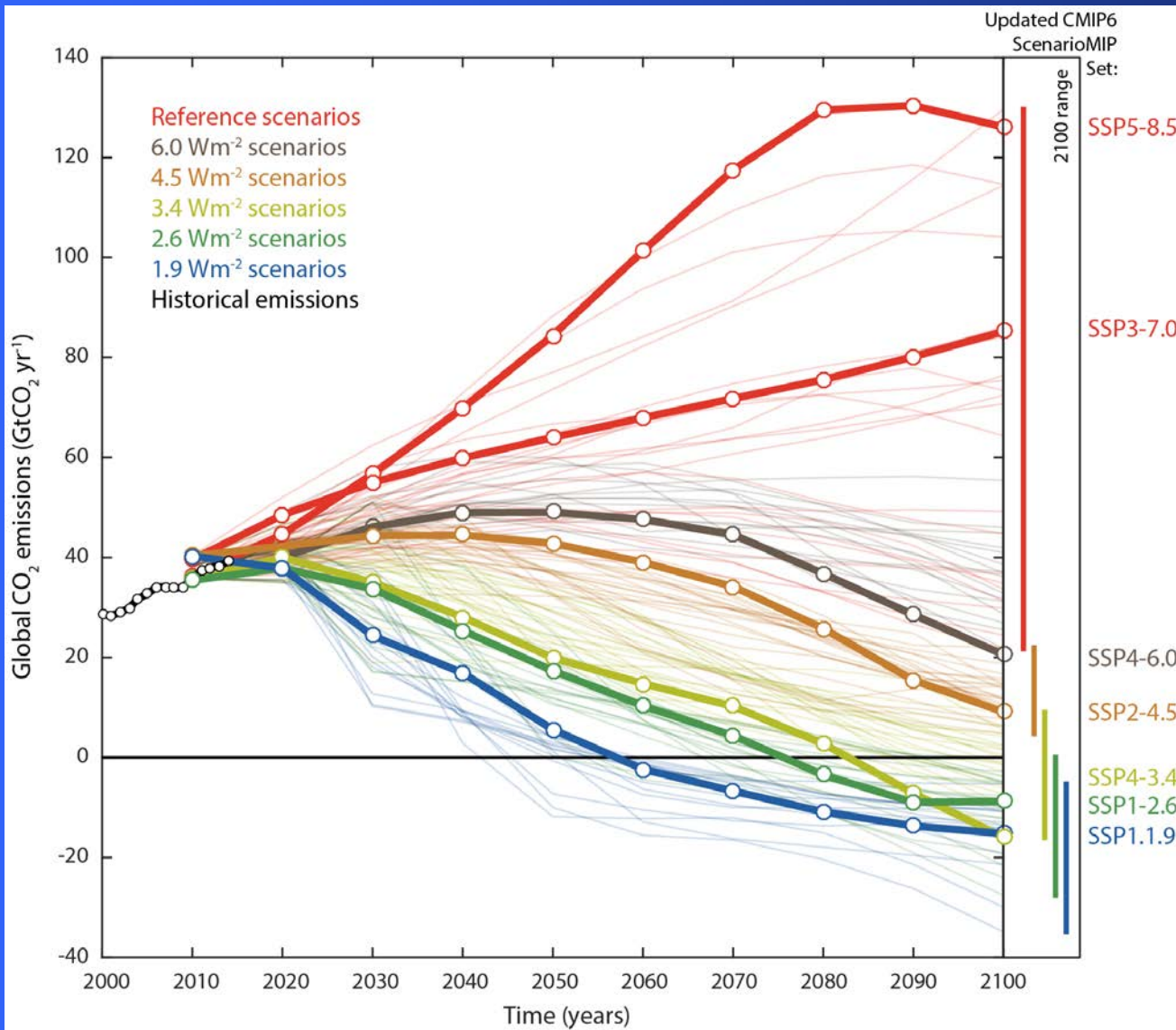


- 2013年京津冀地区所有城市PM_{2.5}年均浓度均超标，区域内PM_{2.5}年平均浓度达106µg/m³，虽2014、2015年空气质量有所改善，但仍大幅超过国家空气质量二级标准。

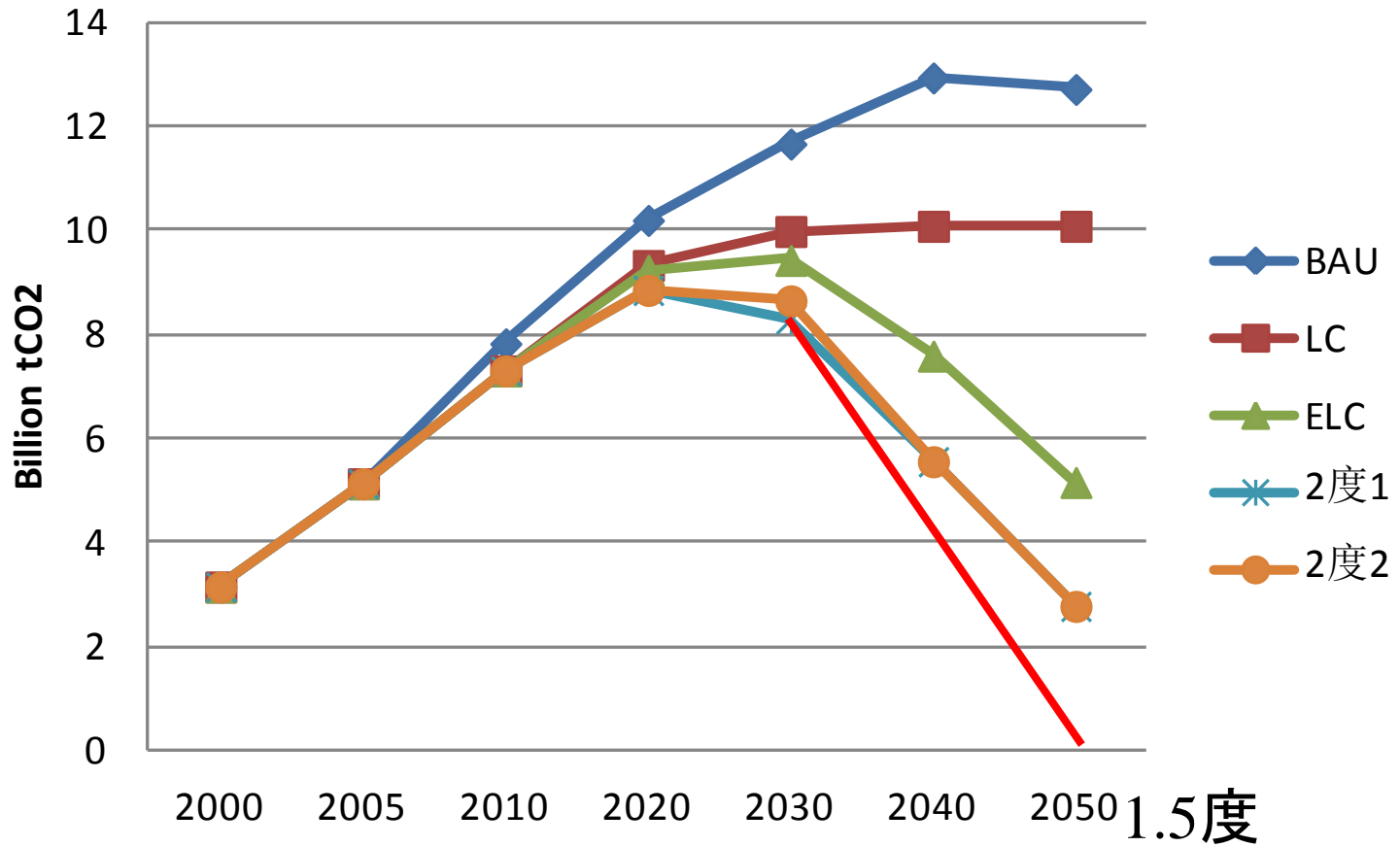


SUSTAINABLE DEVELOPMENT GOALS

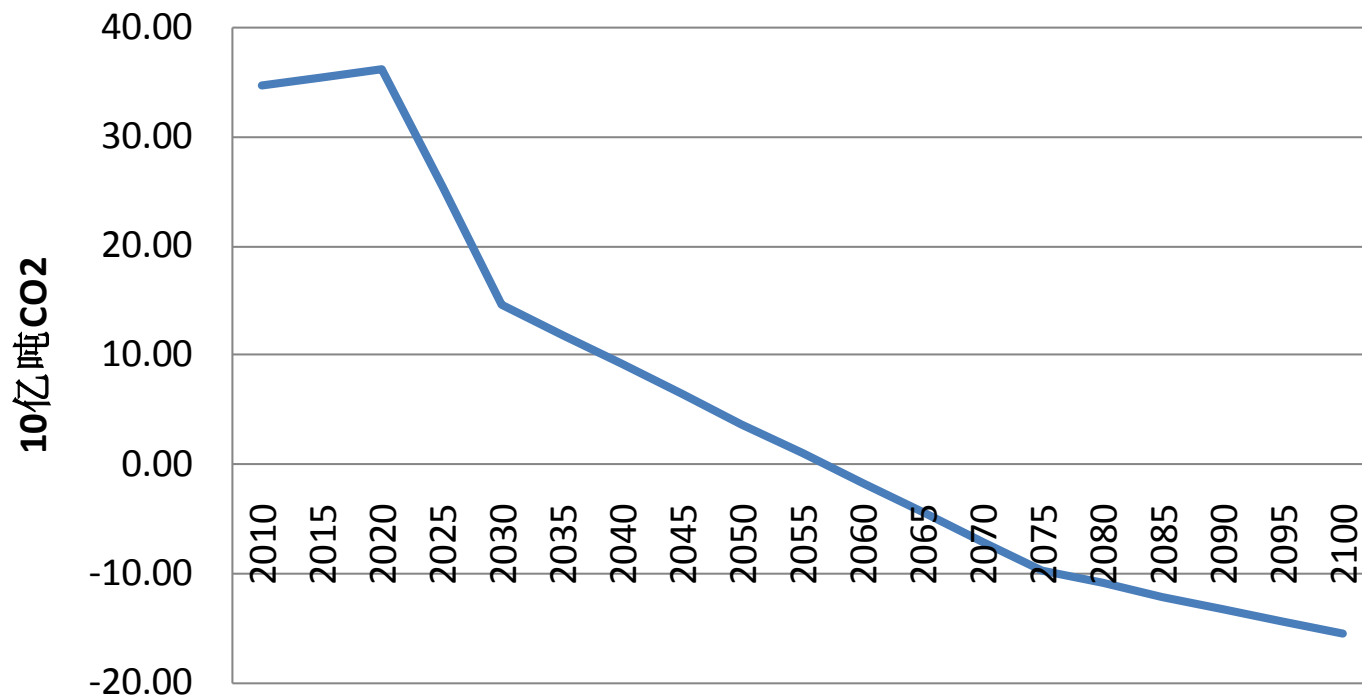




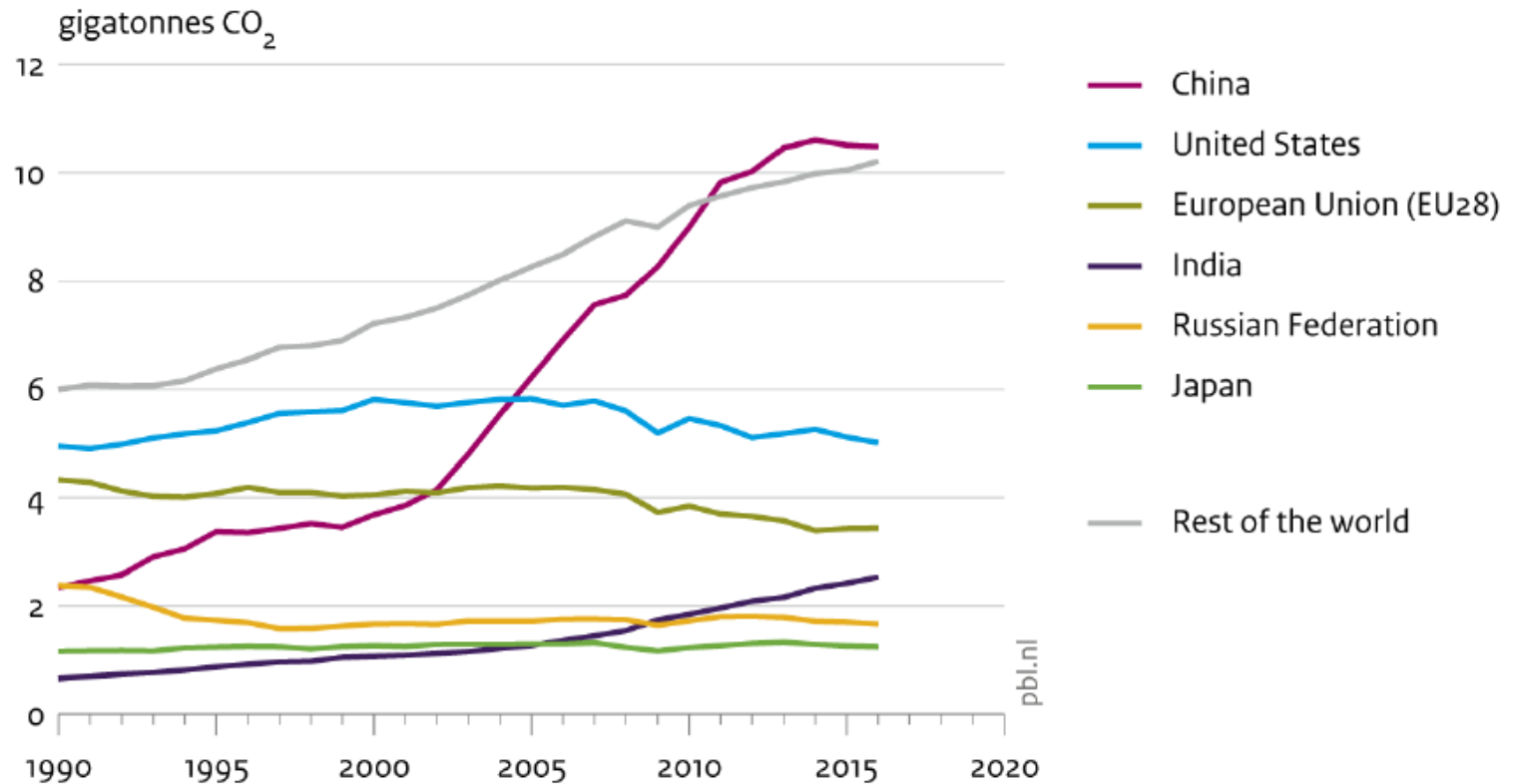
CO2 Emission



全球CO2排放量，1.5°C，IPAC结果

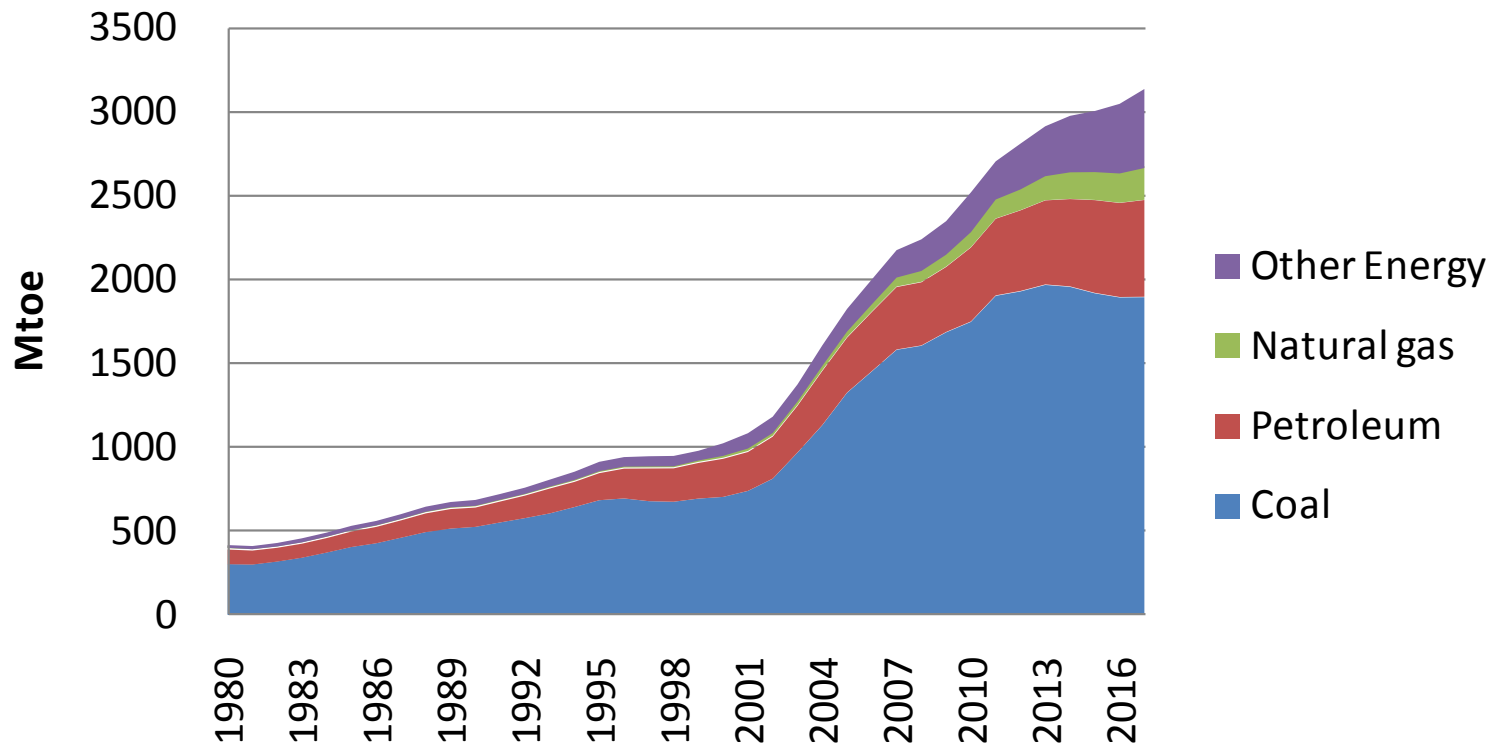


CO₂ emissions from fossil-fuel use and cement production, per country and region

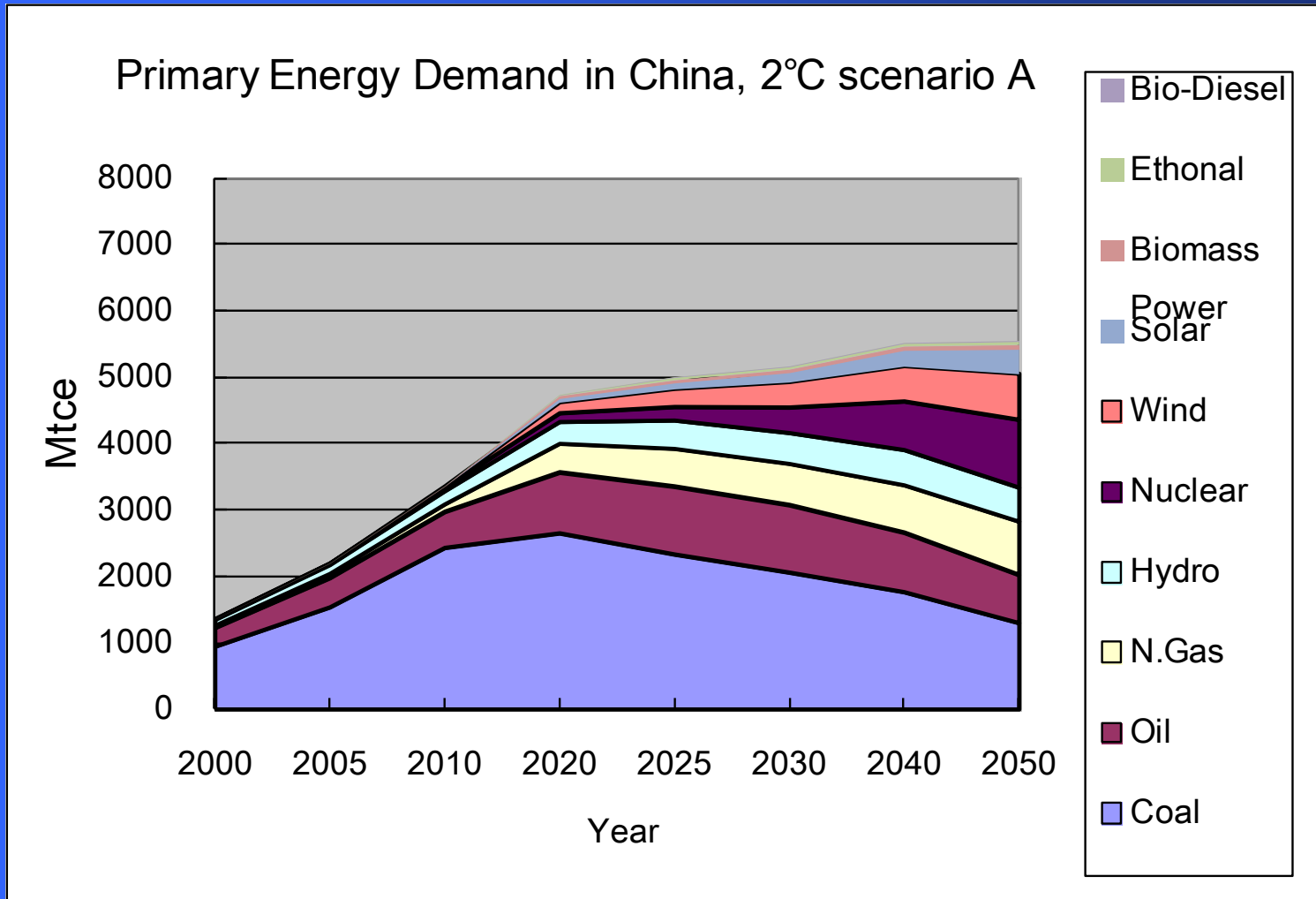


Source: EDGAR v4.3.2 CO₂ FT2016 (EC-JRC/PBL 2017)

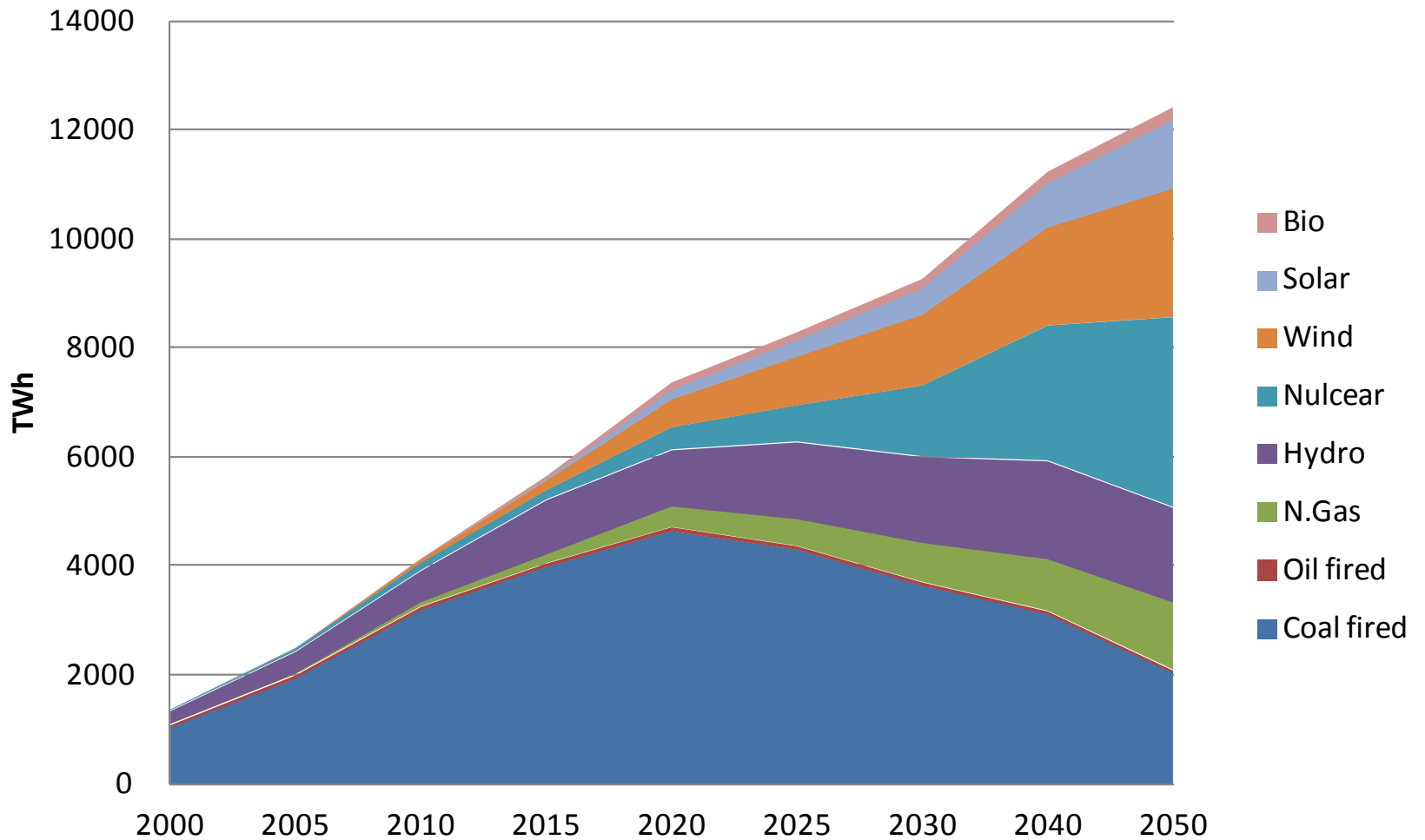
Primary Energy In China



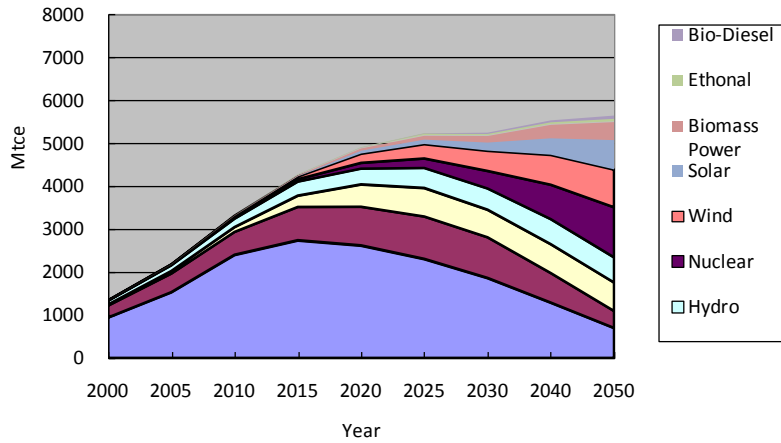
We Need Rapid Transition : Put that into 13th Five Year Plan Primary Energy Demand



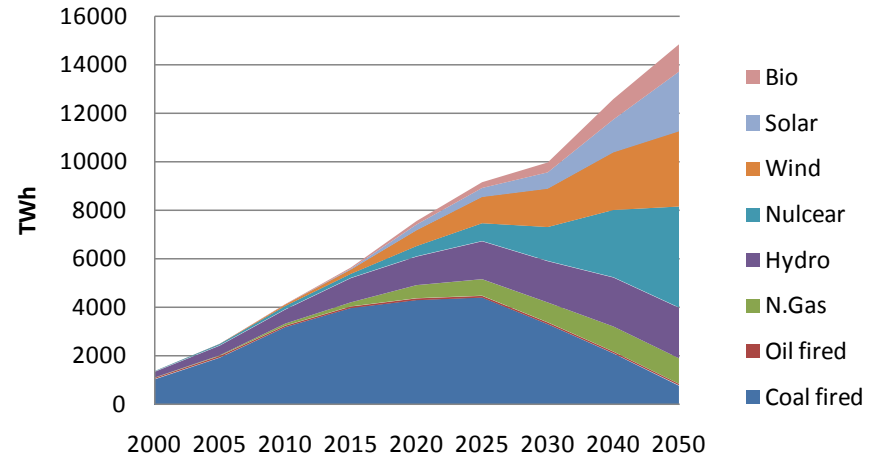
Power Generation, 2°C Scenario A



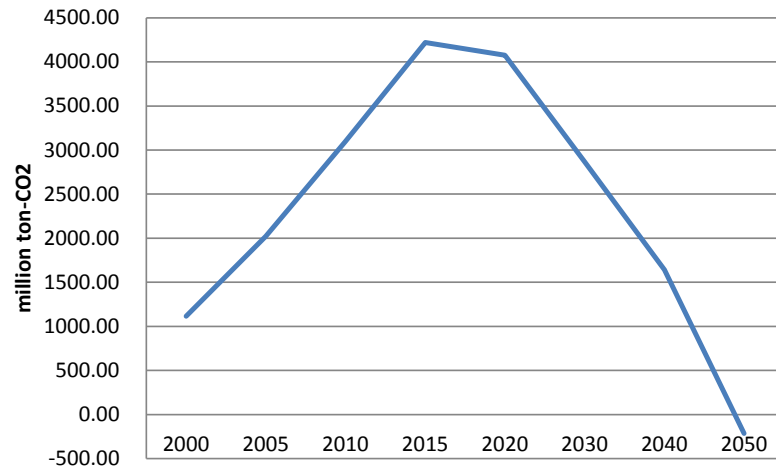
TPE, 1.5°C Scenario



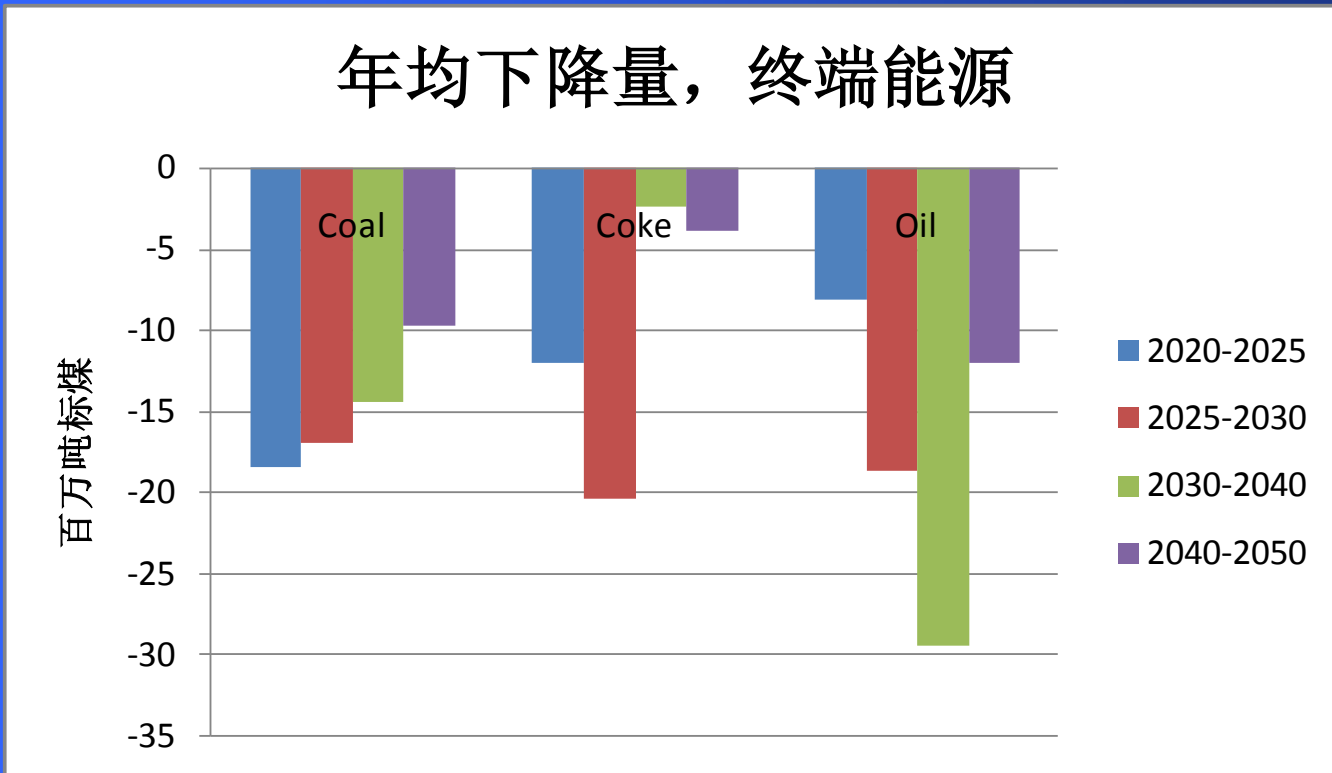
Power Generation, 1.5°C Scenario



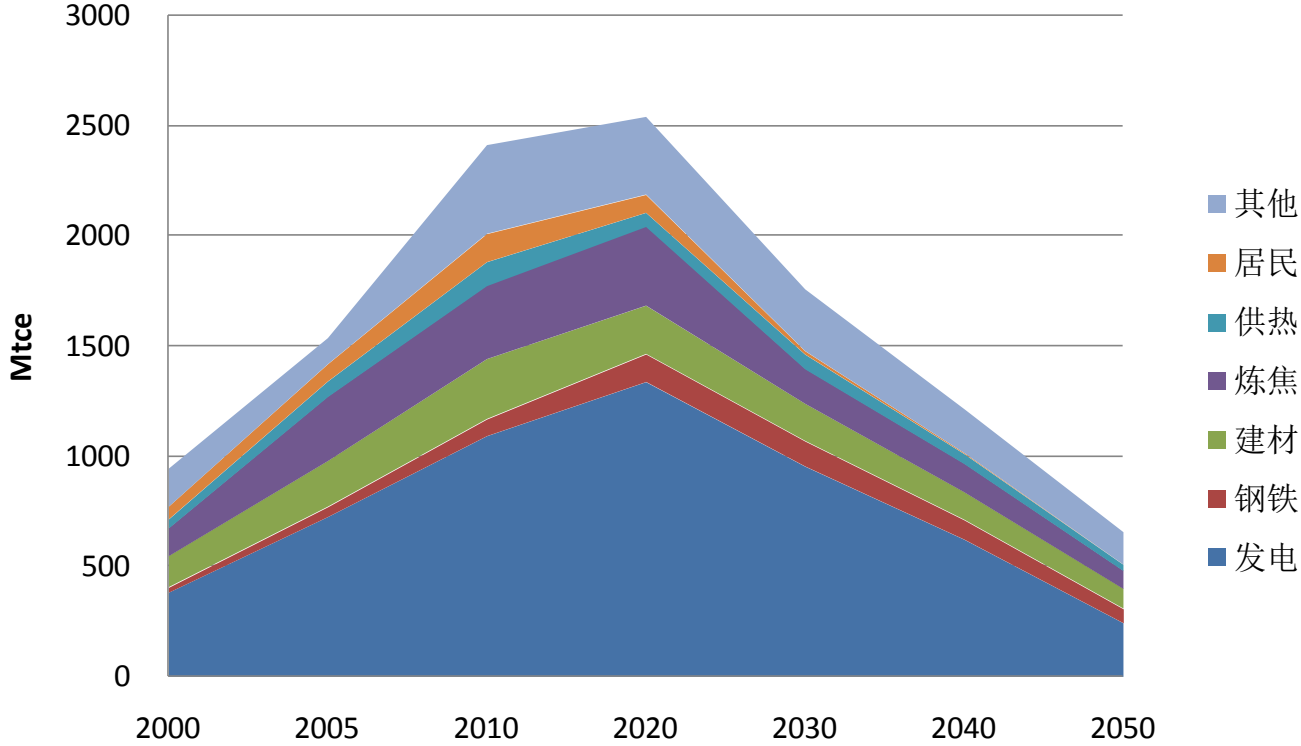
CO2 emission in power sector



Decrease of final energy demand

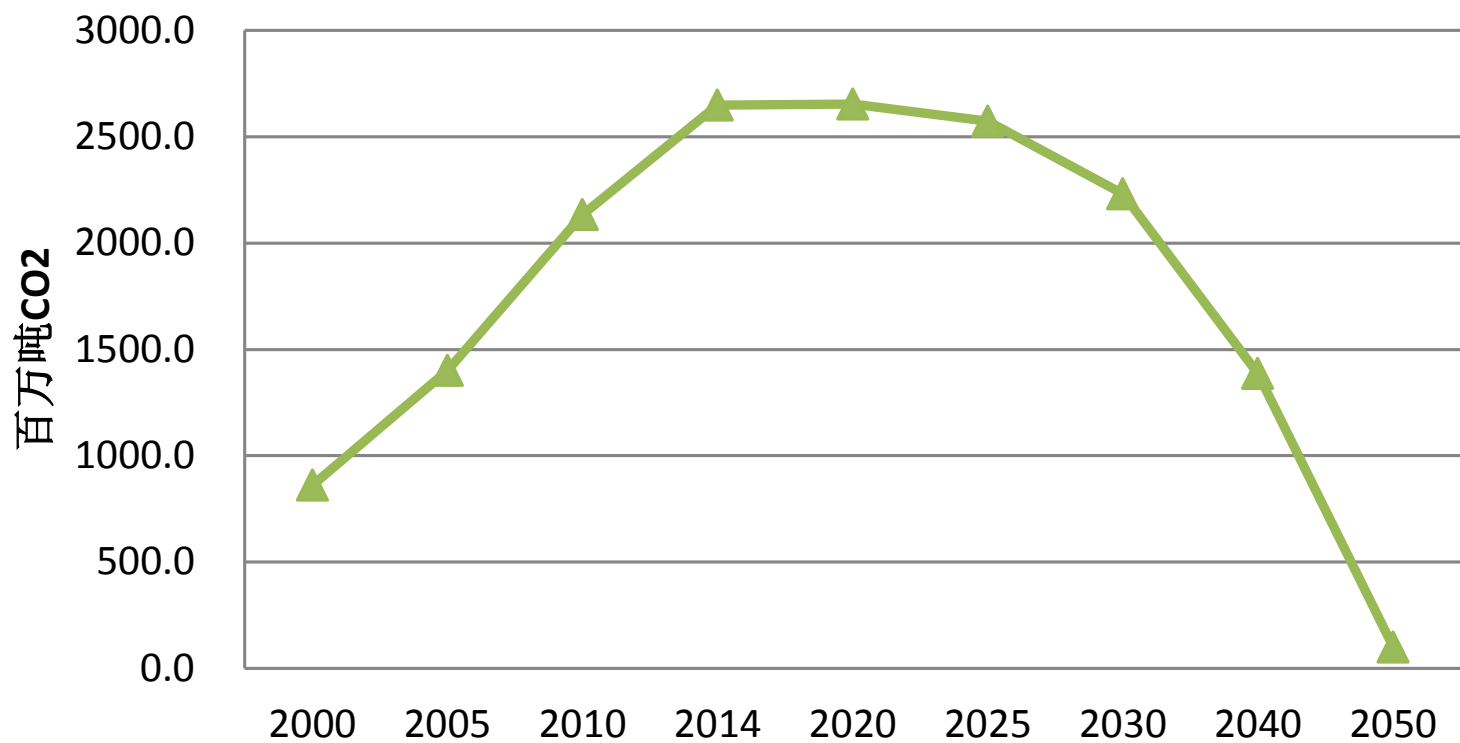


煤炭消费量

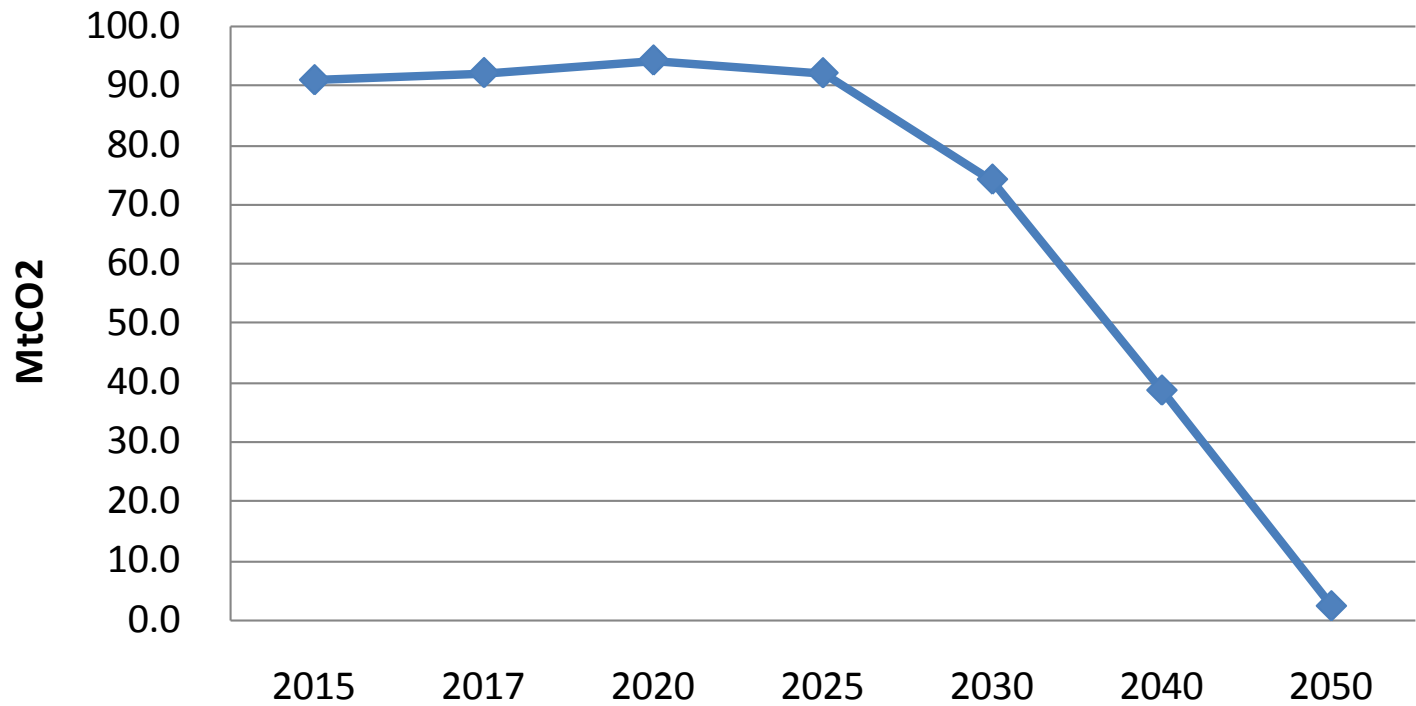


CO2 Emission, 1.5°C

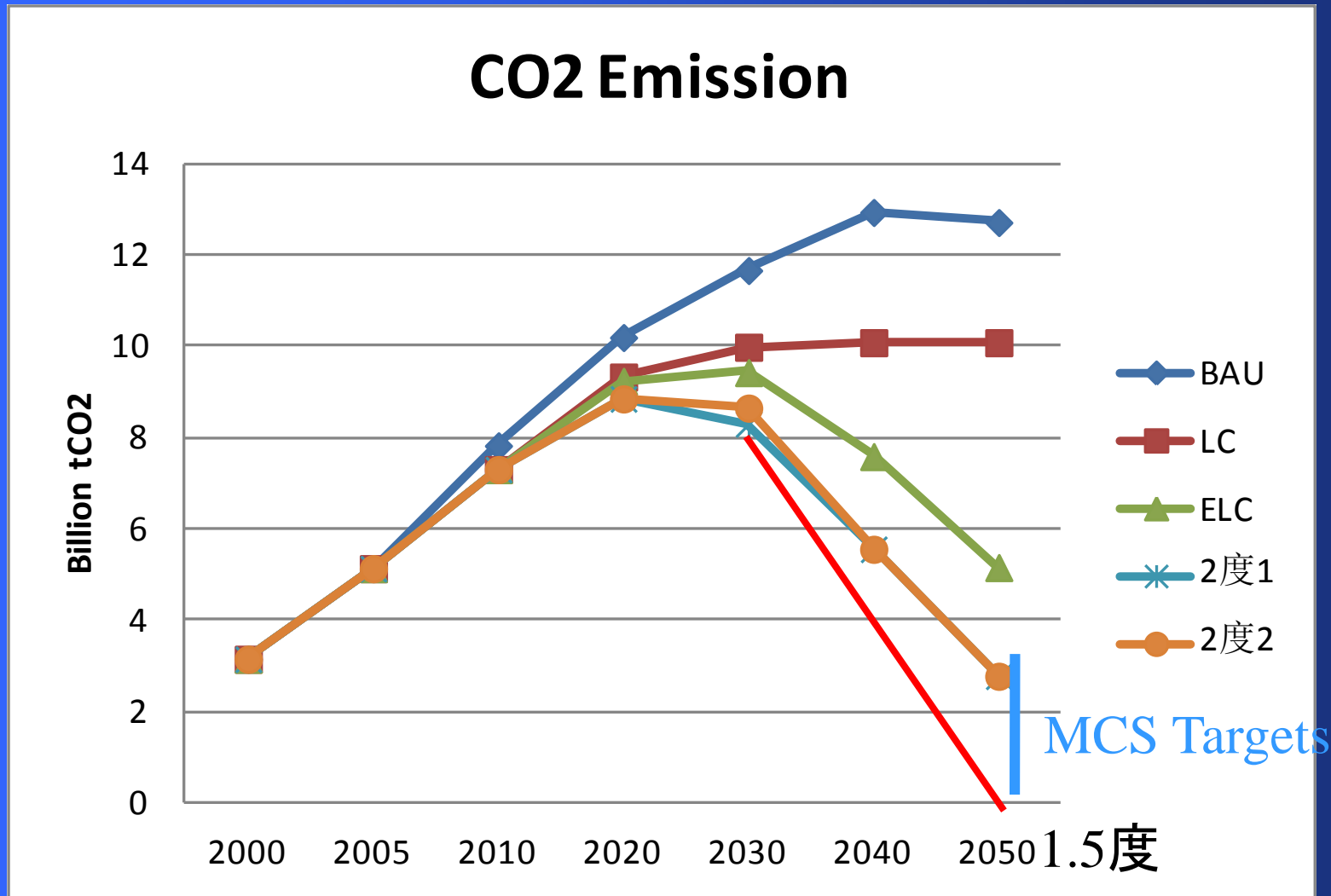
CO2排放量, 1.5度情景



CO2 Emission in Beijing

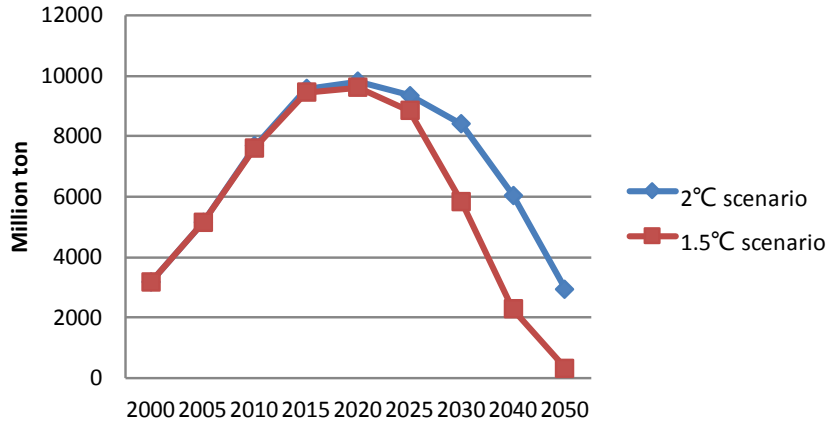


China's MCS: a proposal



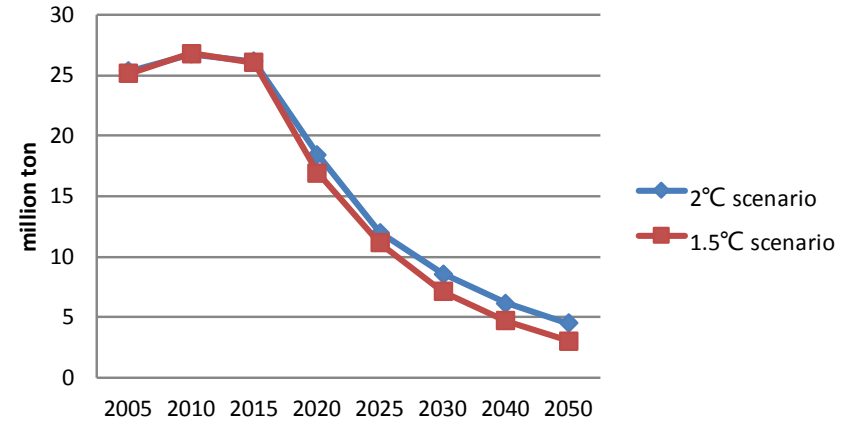
CO₂

CO₂ Emission in China



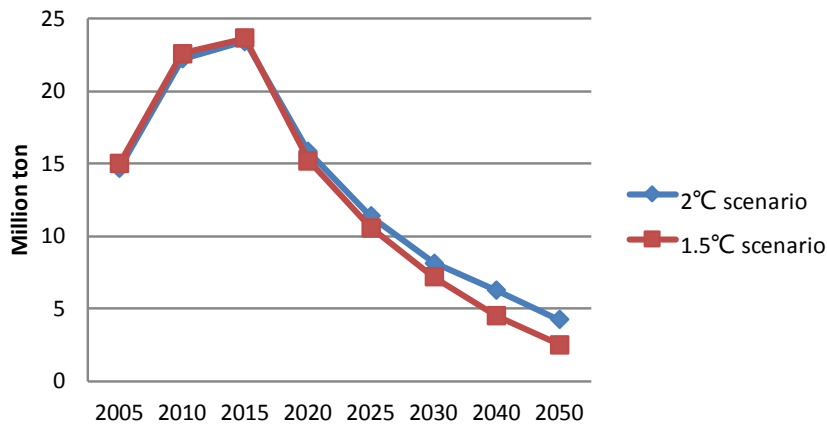
SO₂

SO₂ Emission in China



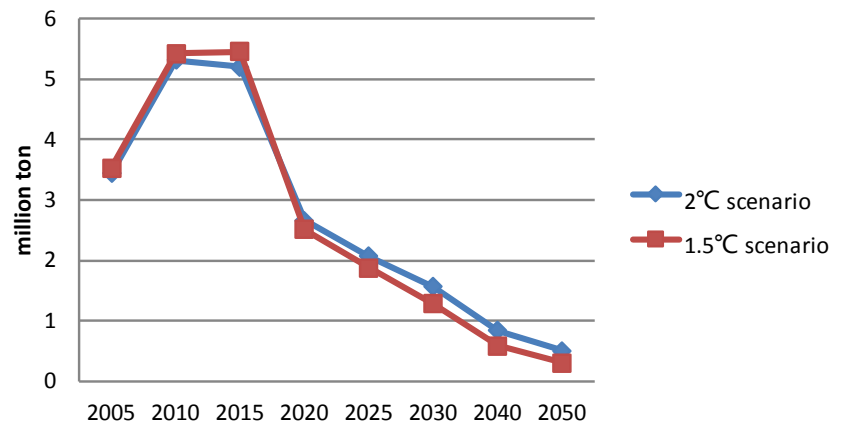
NO_x

NO_x Emission in China

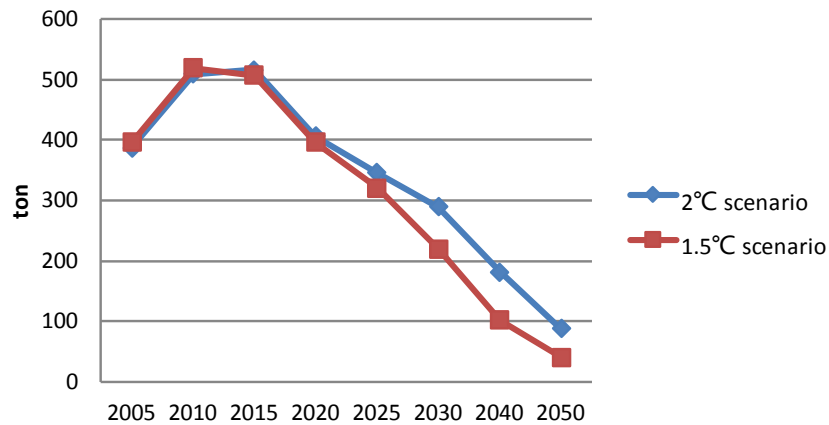


PM_{2.5}

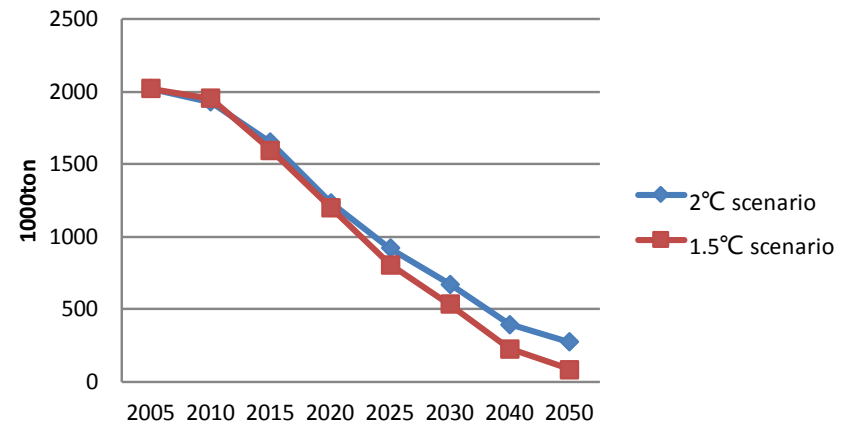
PM_{2.5} emission in China



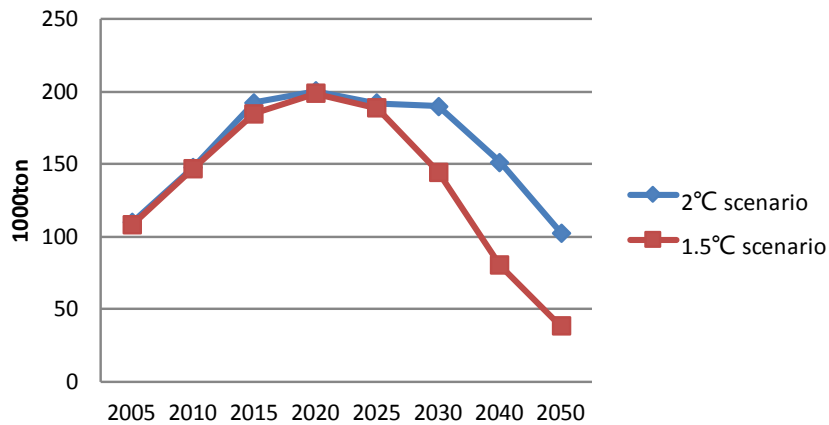
Mercury emission in China



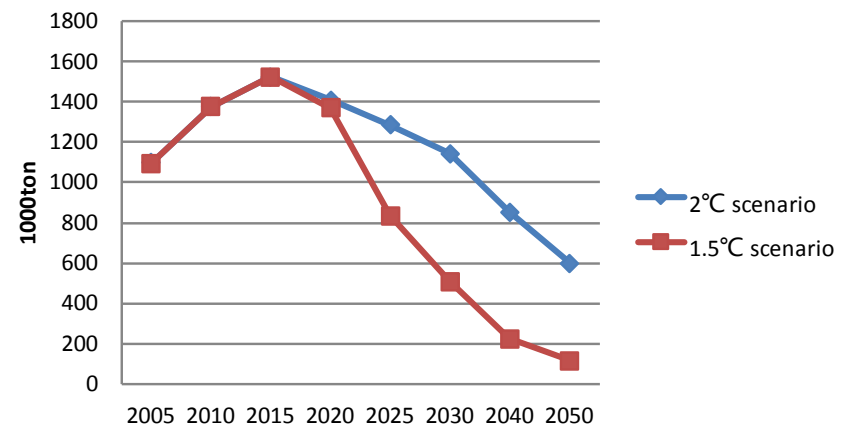
Black Carbon Emission in China



N2O Emission in China



CH4 Emission in China



NOTE e-POWER

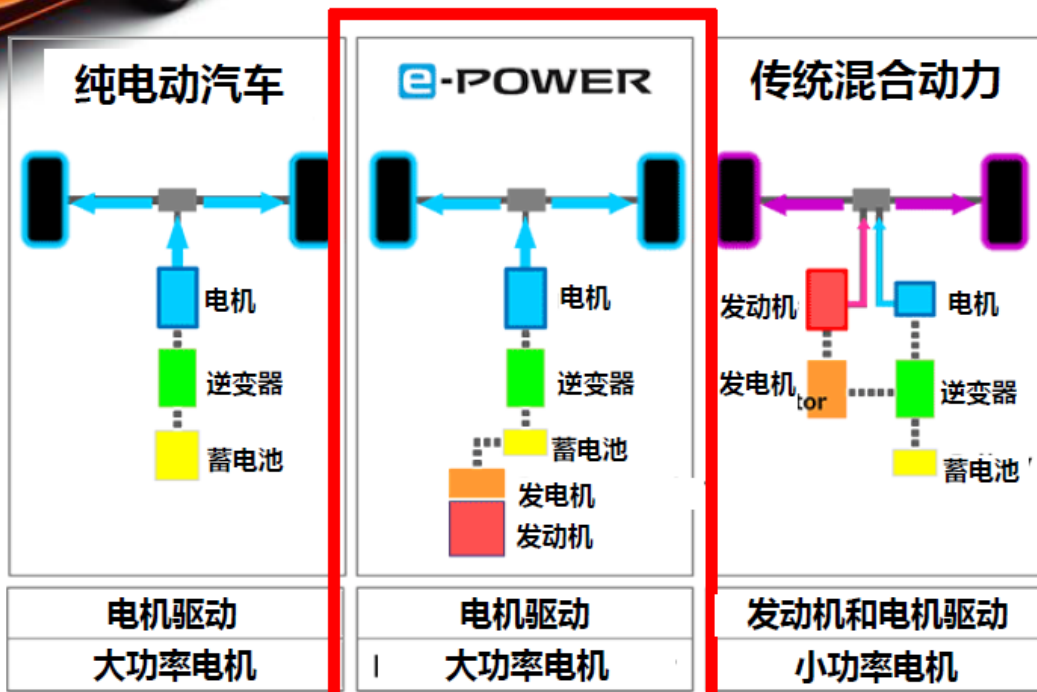


- 新型e-Power 总成
- 与EV具有较高亲和性

燃料消耗量

37.2

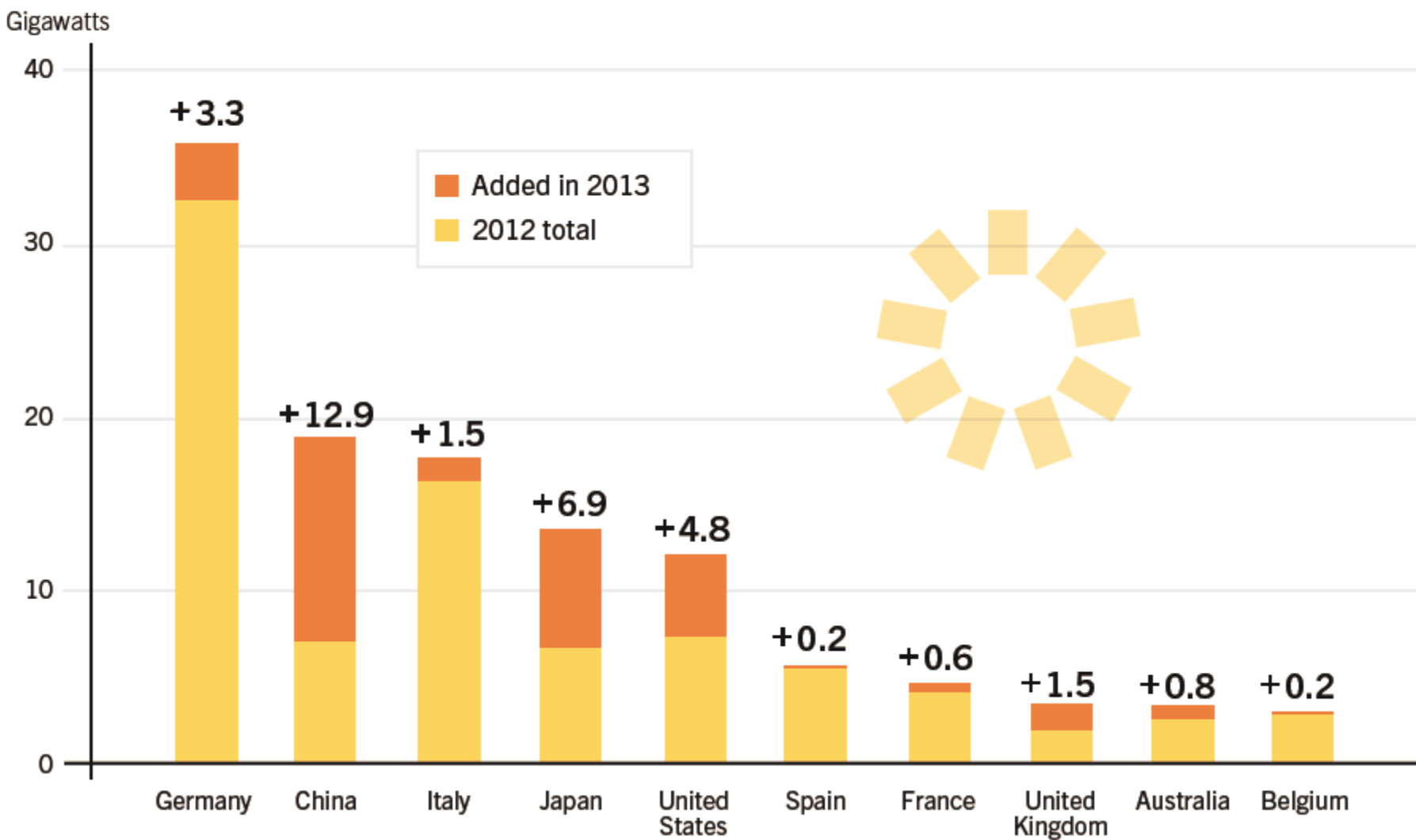
km/L (JC08)



New Battery for vehicles and power storage



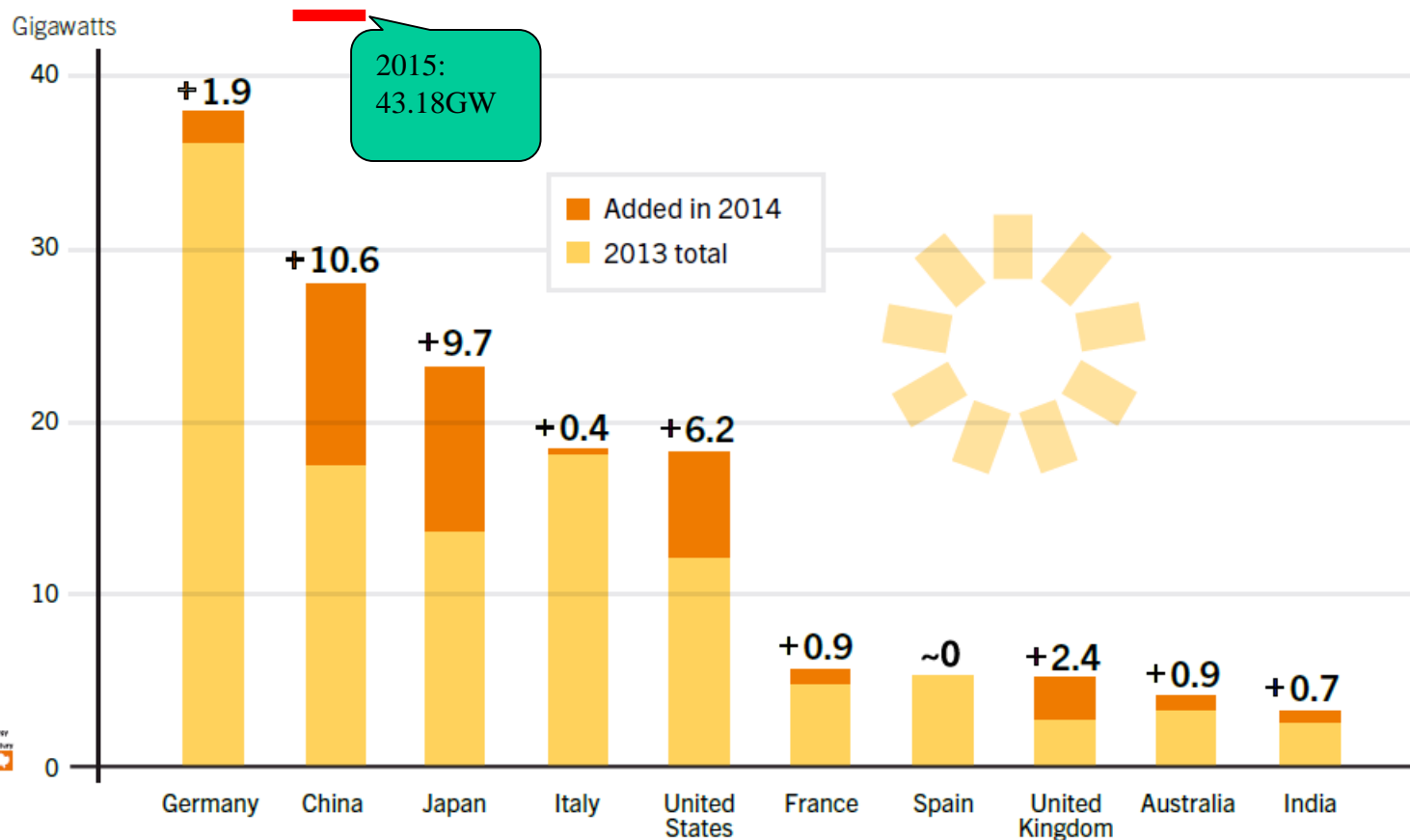
Figure 13. Solar PV Capacity and Additions, Top 10 Countries, 2013

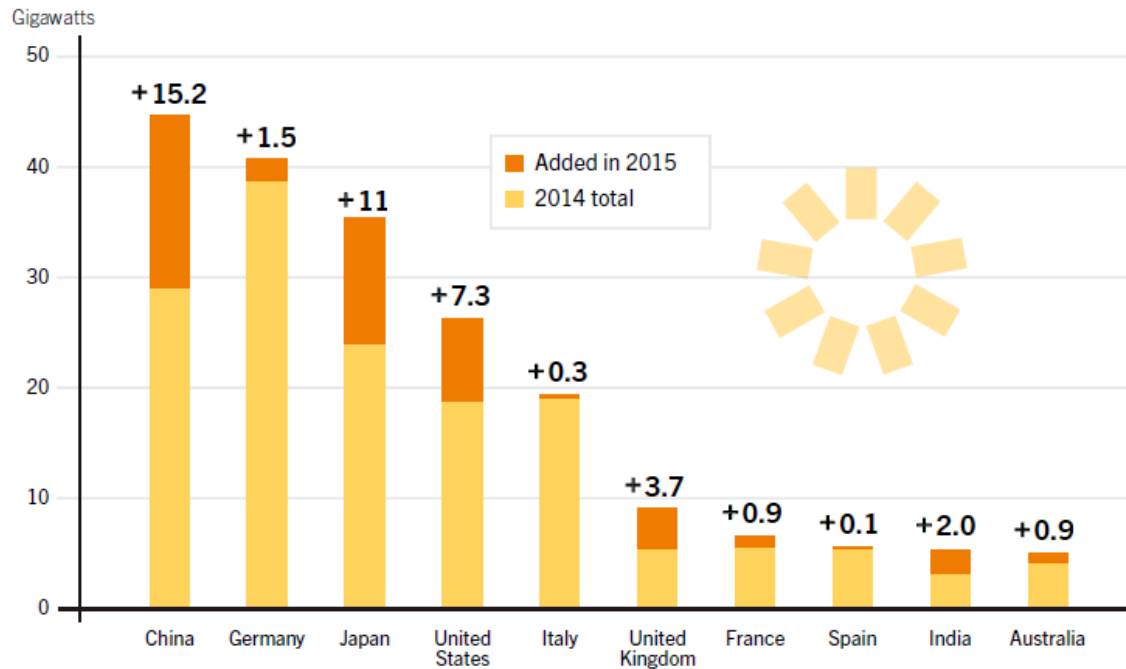




40 GW added in 2014

Solar PV Capacity and Additions, Top 10 Countries, 2014





**50 GW
ADDED IN 2015**

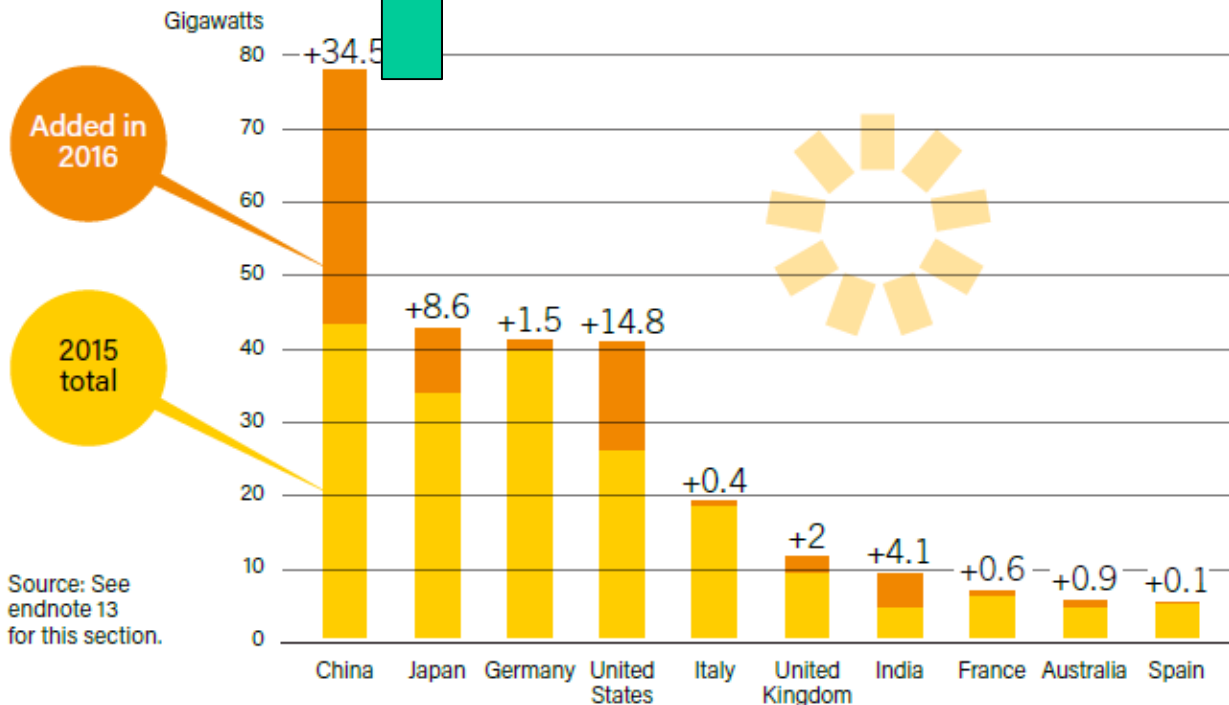
+14GW in second half 2018, expected

+24.3GW from Jan. to June 2018

+53GW in 2017

+24.5GW from Jan. to June 2017

Figure 17. Solar PV Capacity and Additions, Top 10 Countries, 2016

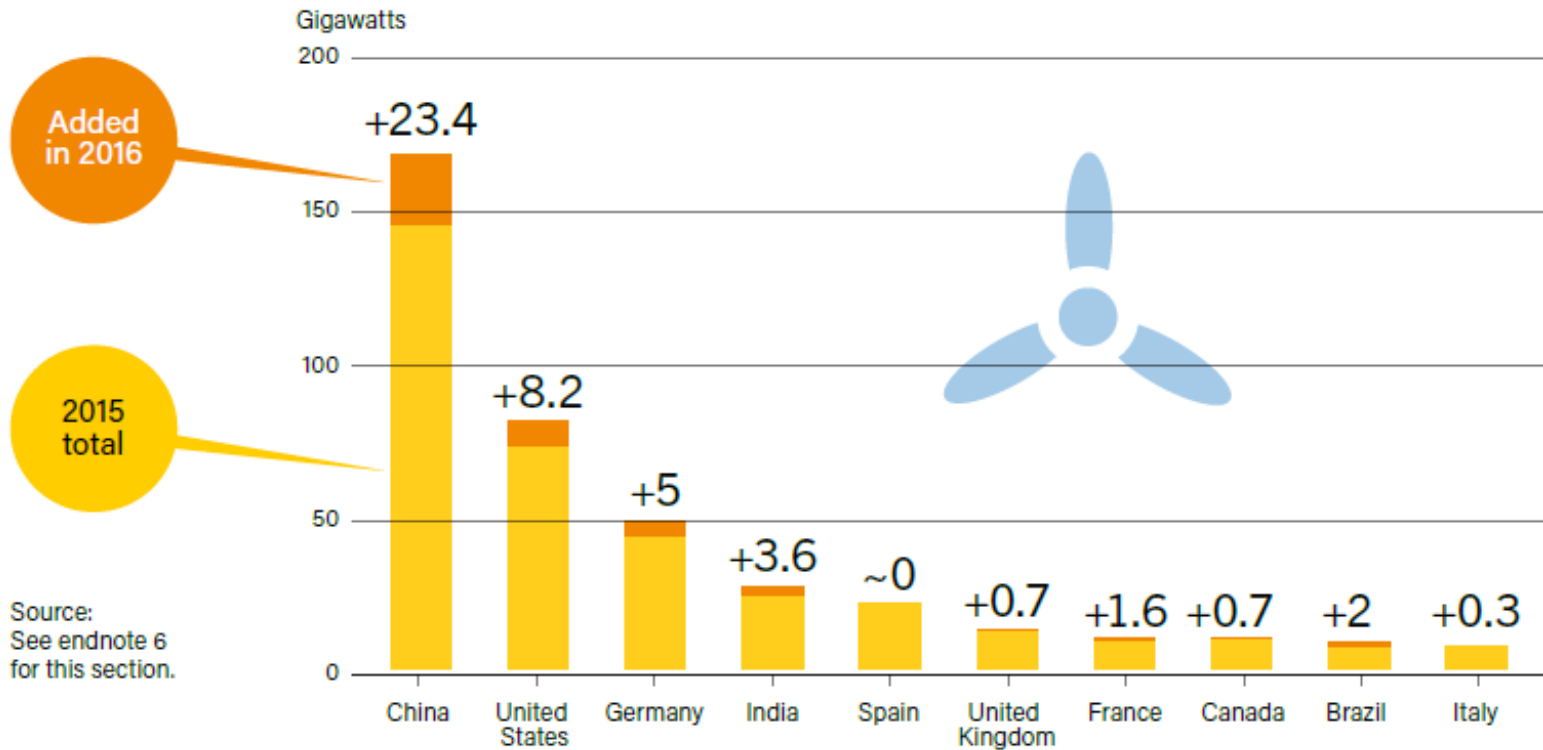


CHINA ACCOUNTED FOR
46% OF NEW CAPACITY.



Source: See endnote 13 for this section.

Figure 27. Wind Power Capacity and Additions, Top 10 Countries, 2016



Source:
See endnote 6
for this section.

Note: Germany's additions are net of decommissioning and repowering. "~0" denotes capacity additions of less than 50 MW.

A 2 degree Asia: A good way to understand the global target

Scenario Analysis:

Japan
Korea
China
India
Thailand
Malaysia
Indonesia
Nepal
Vietnam
Cambodia
Laos
Philippine

