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Propositions

China’s industrial carbon emissions: Historical drivers at the regional and sectoral level and projections in light of policy targets

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1. There are significant differences in the evolution of industrial carbon intensities across provinces, and energy intensity is the decisive factor in shaping carbon intensity for all provinces (Chapter 2).

2. The investment intensity effect was the dominant factor for the increase in industrial aggregate energy intensity, and energy-intensive industries were the subsectors that played the most important roles in this effect (Chapter 3).

3. Regional convergence could result in substantial emissions reduction and make it possible for energy-intensive industries to achieve the emissions peak before 2030 (Chapter 4).

4. After nearly two decades of rapidly rising emissions in China’s industrial sector, the shifts in industrial structure, transition in energy mix and improvement in energy efficiency caused a temporary peak of industrial emissions in 2013 and decline thereafter (Chapter 5).

5. The existing literature reports that the industrial emissions will likely peak in 2030 with current policies, which is in alignment with China’s commitment to the Paris Agreement (Chapter 5).

6. A good understanding of the driving forces of CO₂ emissions is essential to develop realistic reduction targets as well as track and evaluate performance (Wang et al., 2017).

7. Heavy capital investment has been the main driver of strong economic growth in China since 2000, and economic growth is the main driver of rising CO₂ emissions (Guan et al., 2014; Jakob et al., 2014).

8. Energy and low-carbon innovations sometimes go along with energy rebound effect (Shao et al., 2014; Li et al., 2016).

9. Climate change is regarded as a significant environmental challenge to future economic growth, either because it will create considerable damage along with associated economic costs, or because stringent climate policy will curtail growth (van den Bergh, 2017).

10. If the Bitcoin rate of adoption follows that of broadly adopted technologies, it may produce enough emissions to exceed 2 °C of global warming within less than three decades (Mora et al., 2018).

11. The damage of air pollution on the brain of older people likely imposes substantial health and economic costs (Zhang et al., 2018).

12. Twitter sentiment, the wisdom of the Twitter crowd as expressed through mood states yields moderate influence on the pricing and trading of renewable energy stocks (Reboredo and Ugolini, 2018).