

The Drivers of Chinese CO₂ Emissions from 1980 to 2030

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ABSTRACT

China's booming economy has resulted in a rapid growth of energy consumption that has doubled within the first 25 years since its economic reform at the end of the 1970s, and doubled again in the last 5 years. China's heavy reliance on coal as its dominating energy source has made it one of the most polluting countries in terms of CO₂ emissions. This paper combines *IPAT* and input-output analysis to assess the driving forces of China's CO₂ emissions from 1980 to 2030. According to our reference scenario, production-related CO₂ emissions will increase another three times by 2030. Household consumption and capital investments will drive the increased CO₂ emissions with growth in exports tempered by increased imports. Currently, efficiency gains partially offset the projected increases in consumption, but our scenarios show that this is set to change if China's consumption patterns converge to current US levels. Relying on efficiency improvements alone will not stabilize China's future emissions. Our scenarios show that even optimistic and wide-spread

installation of carbon capture and storage will only slow the increases in CO₂ emissions.

KEYWORDS: Climate Change, Sustainable Consumption, Input-Output Analysis, Structural Decomposition Analysis, IPAT.